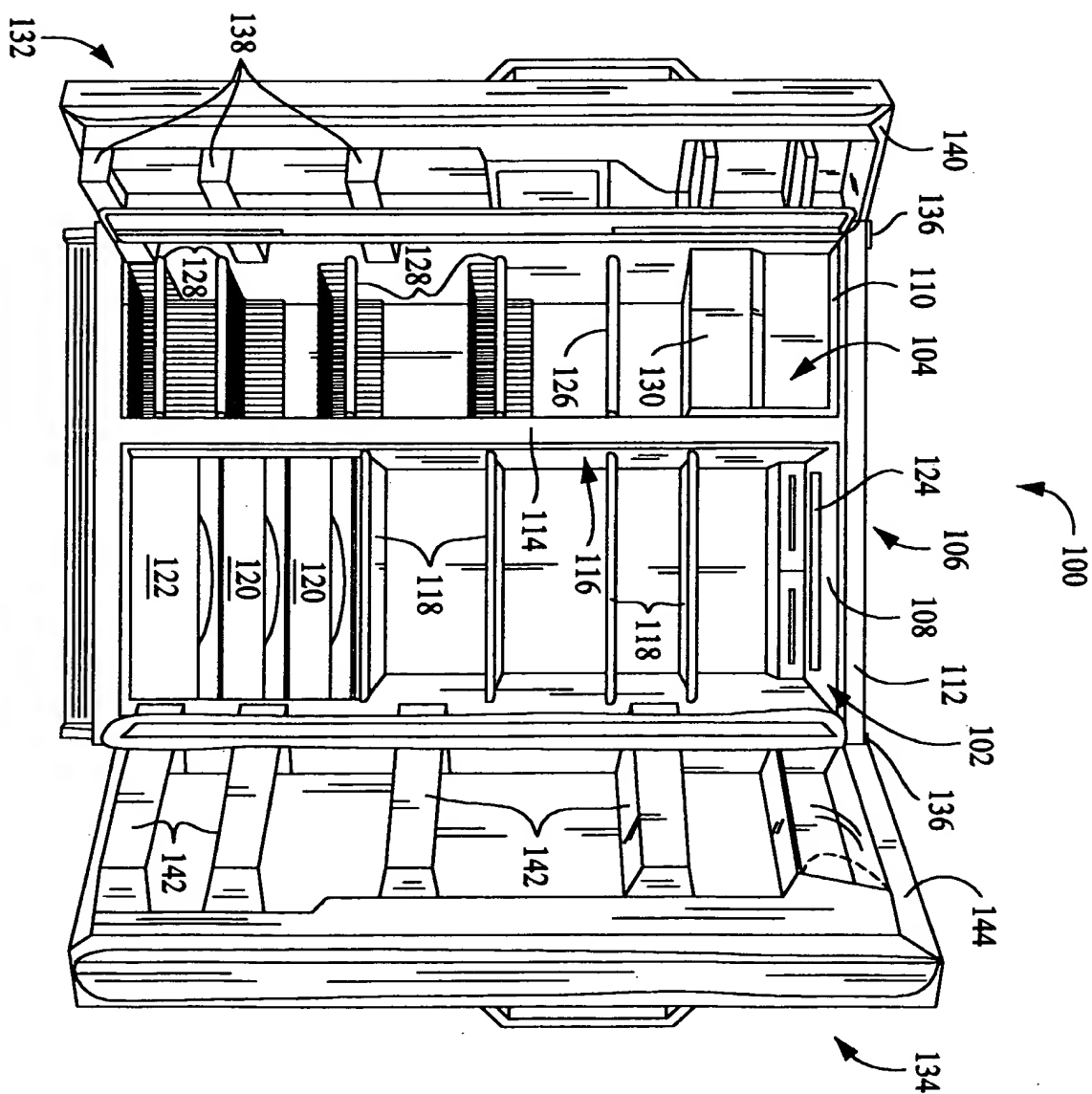


FIG. 1





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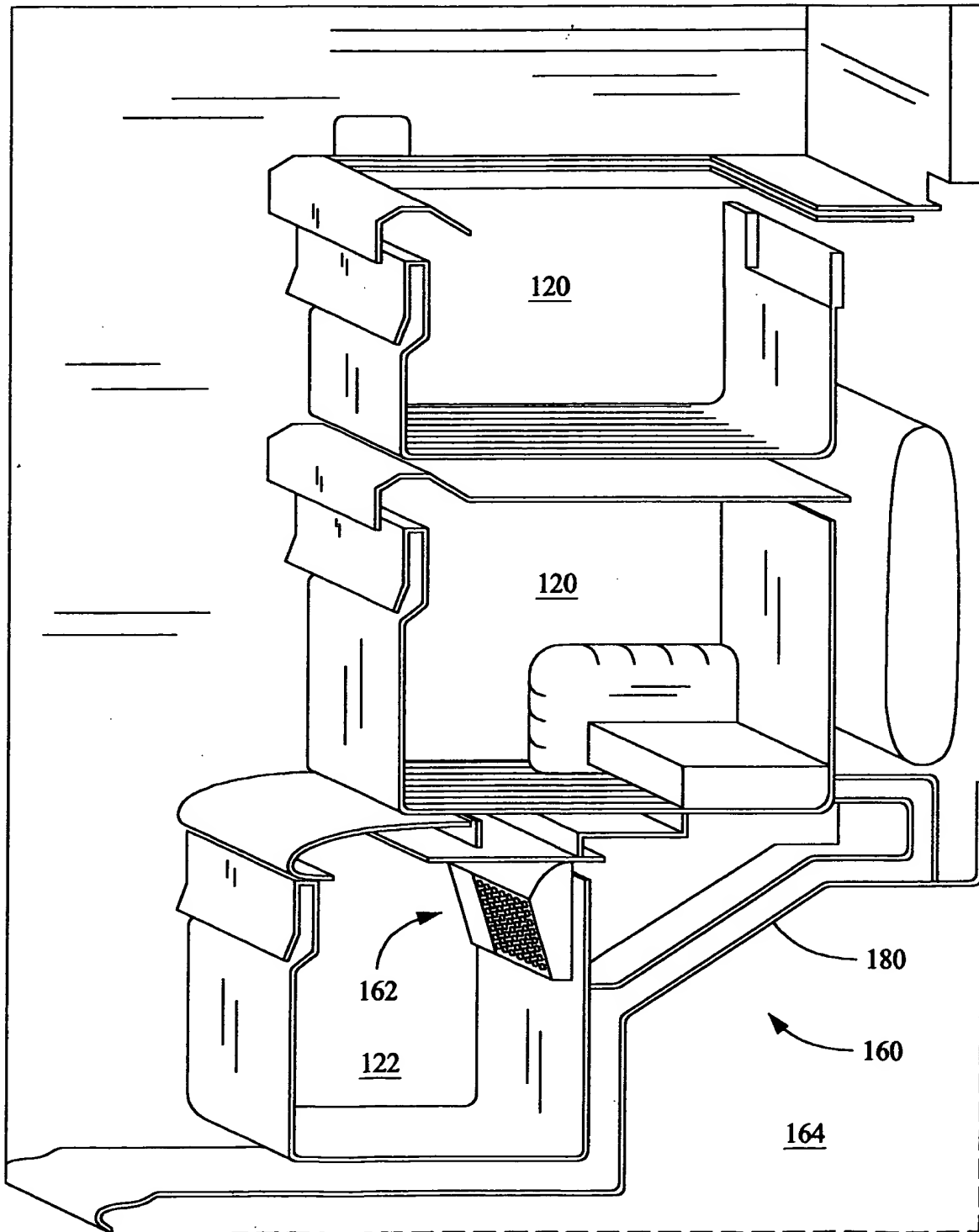


FIG. 2



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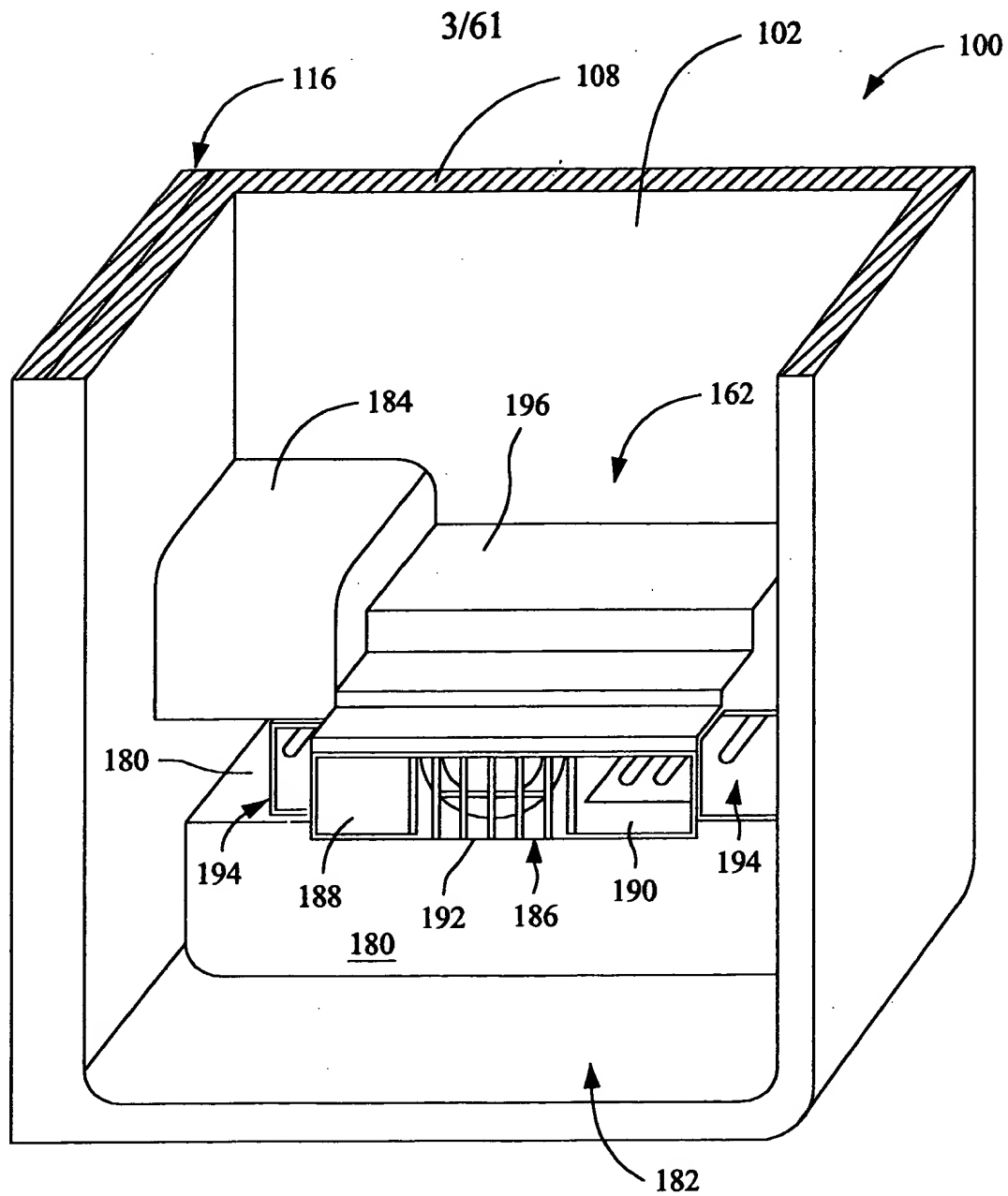


FIG. 3

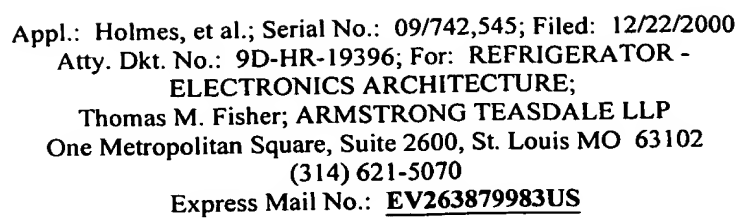


FIG. 4



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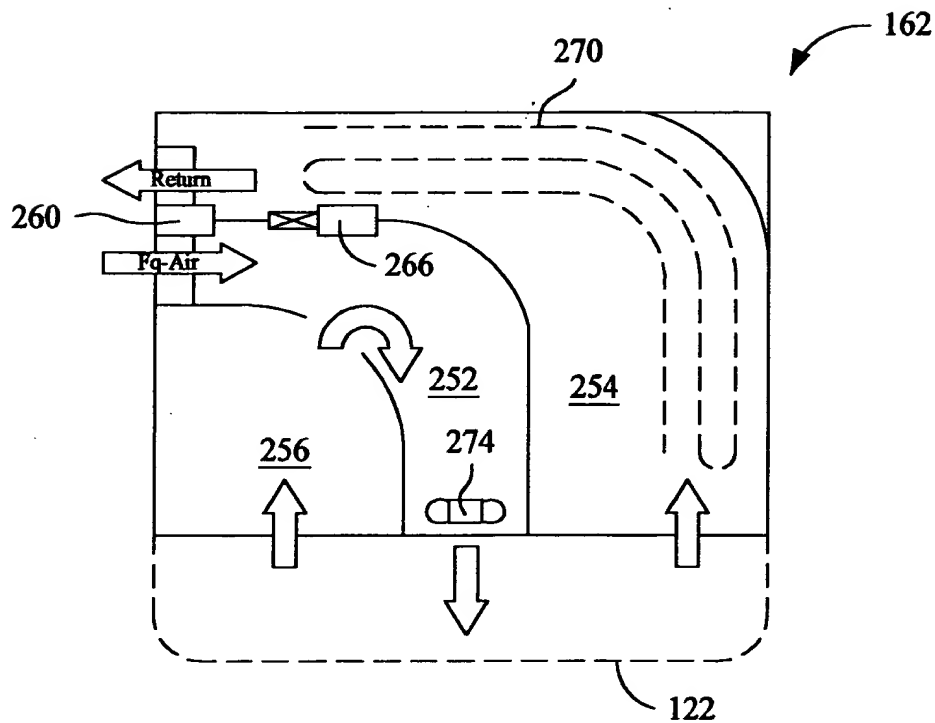


FIG. 5

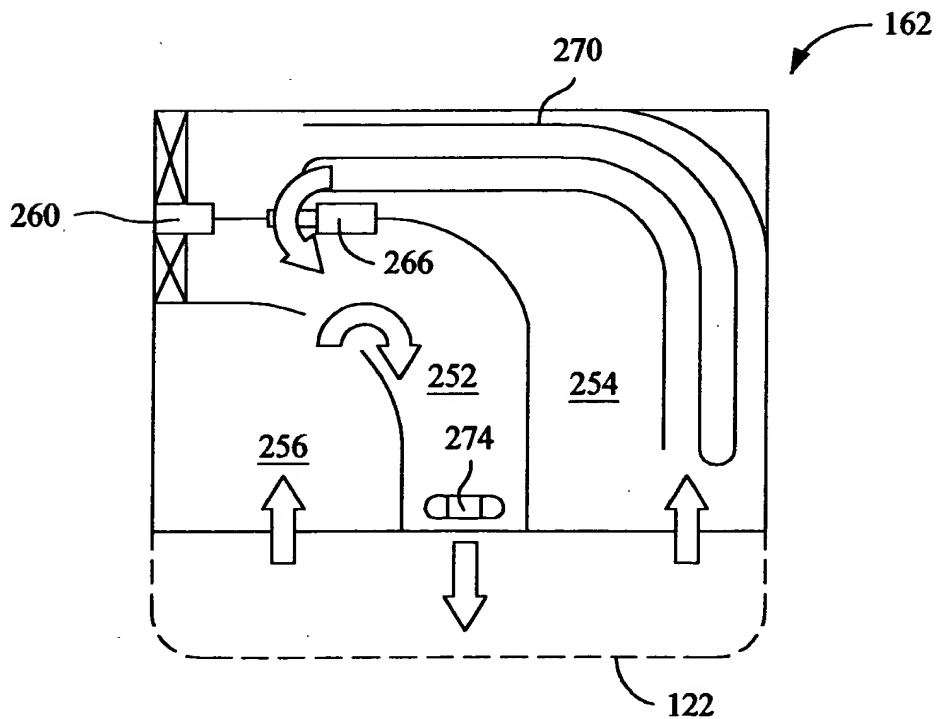


FIG. 6



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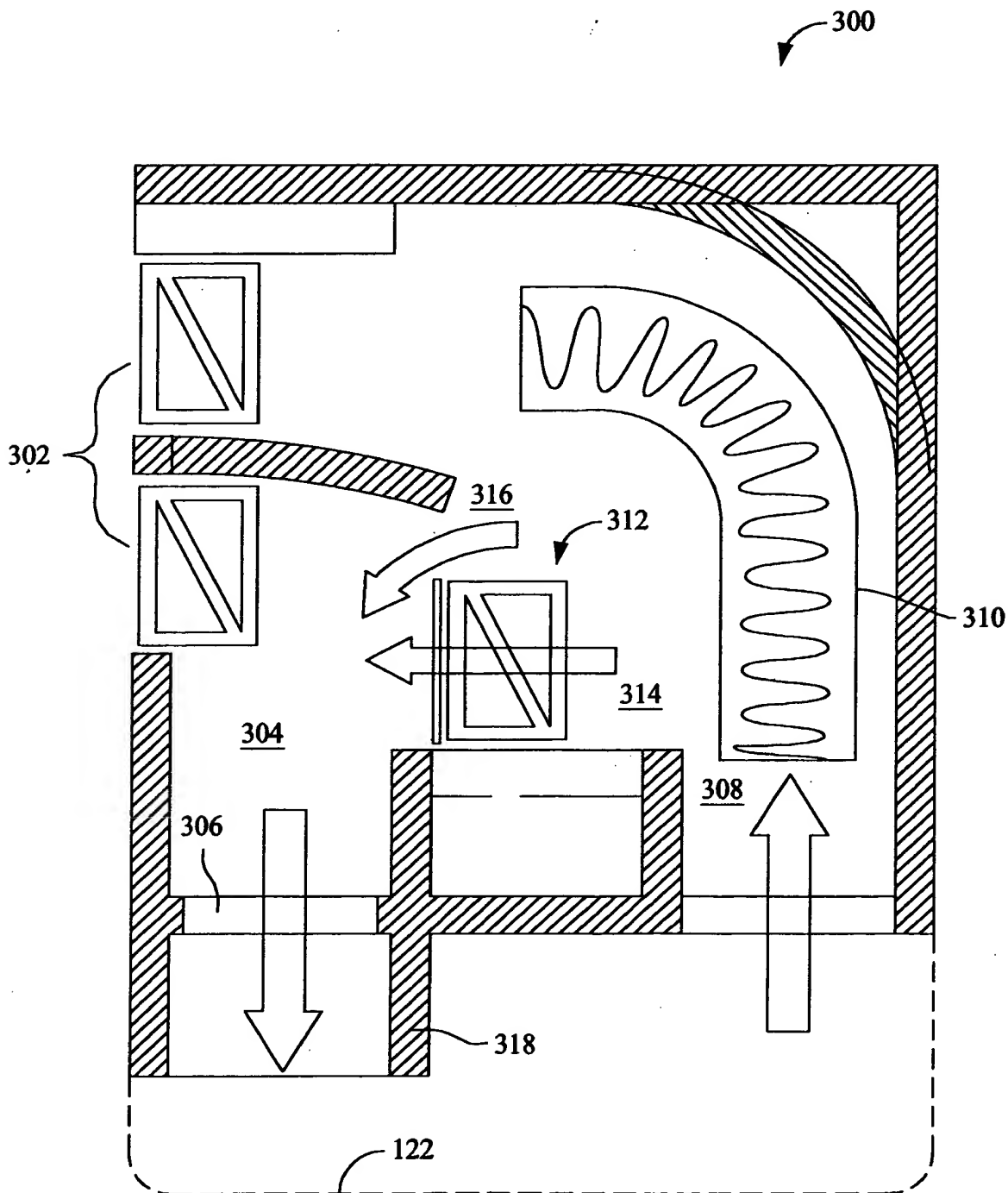


FIG. 7

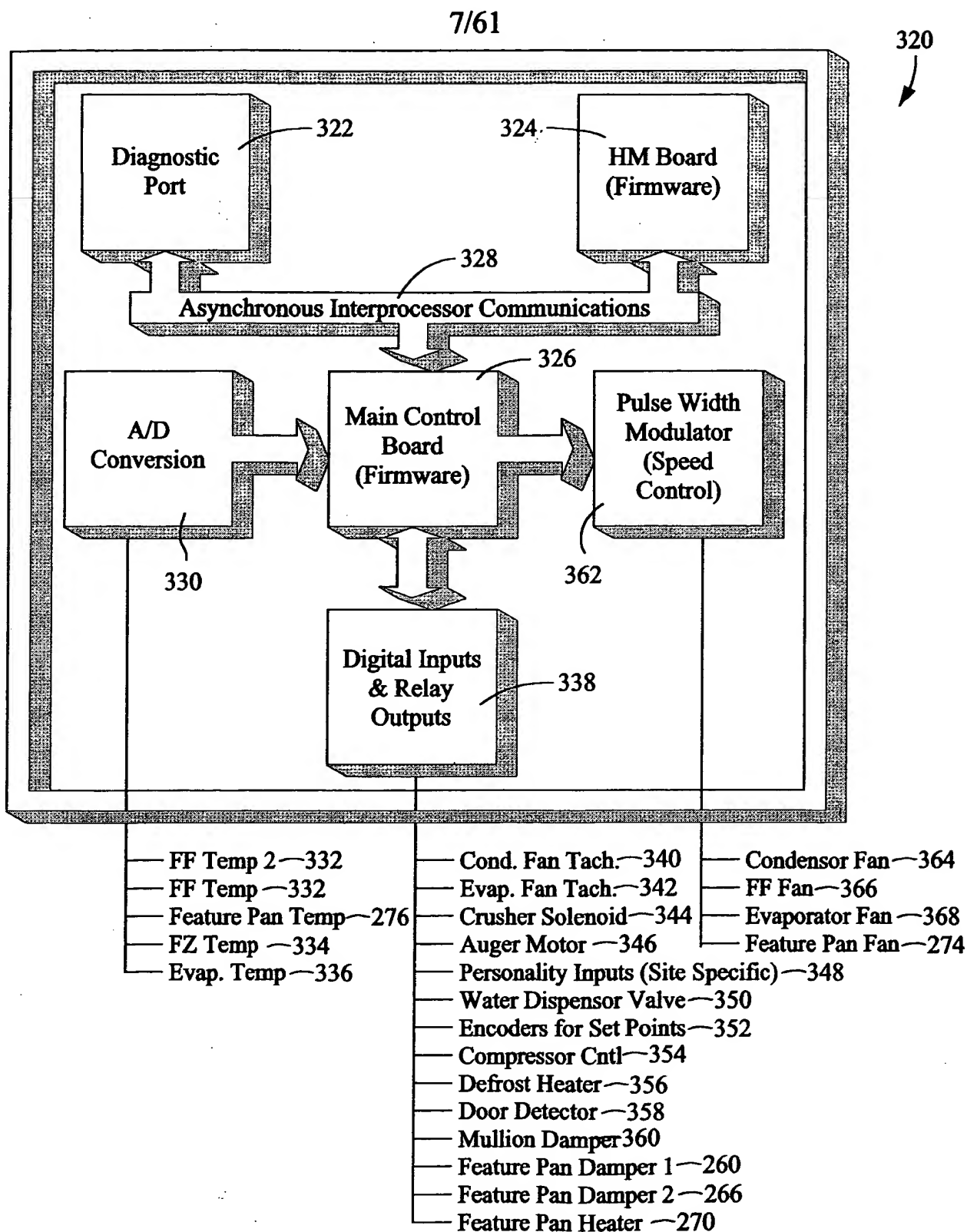


FIG. 8

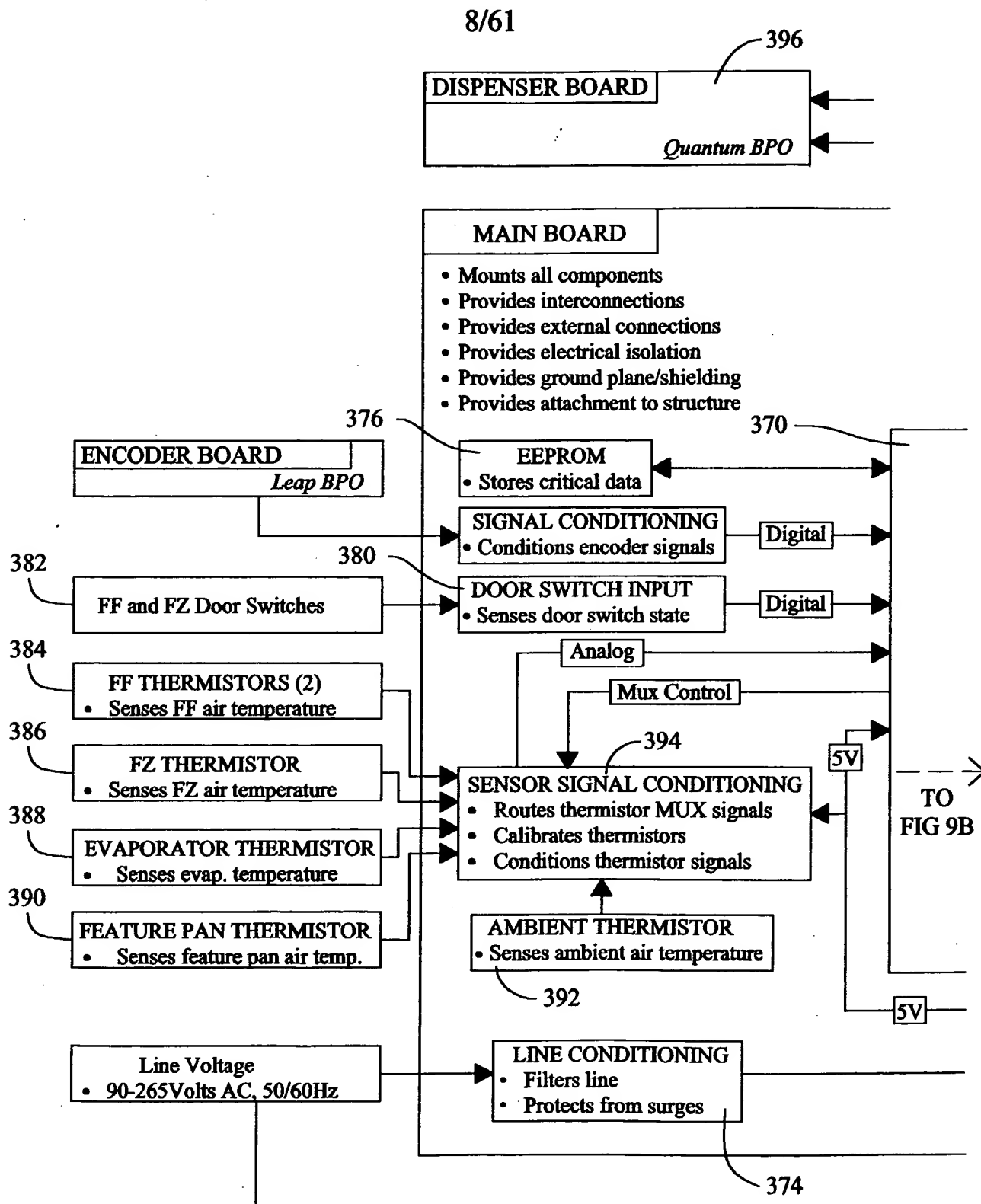
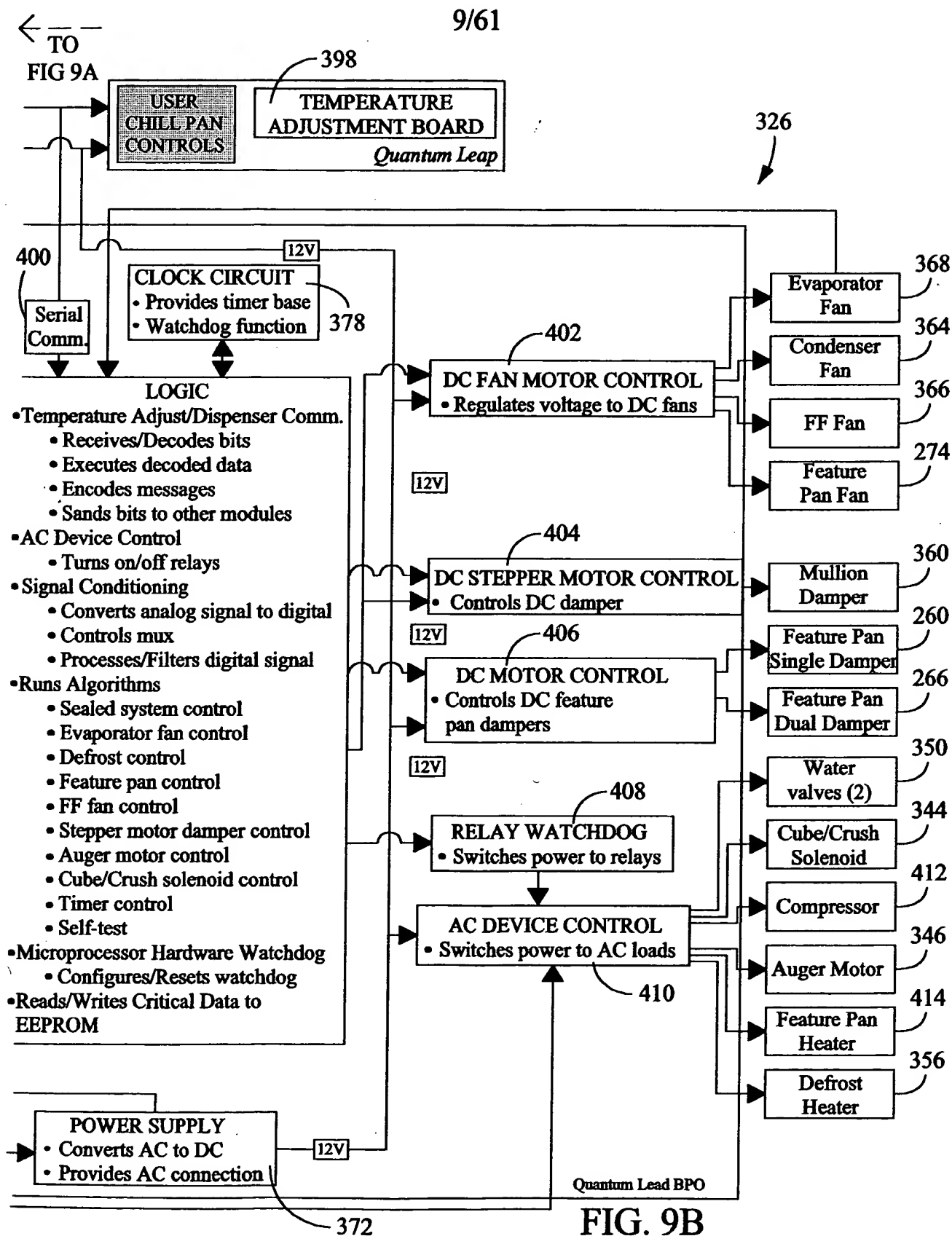


FIG. 9A





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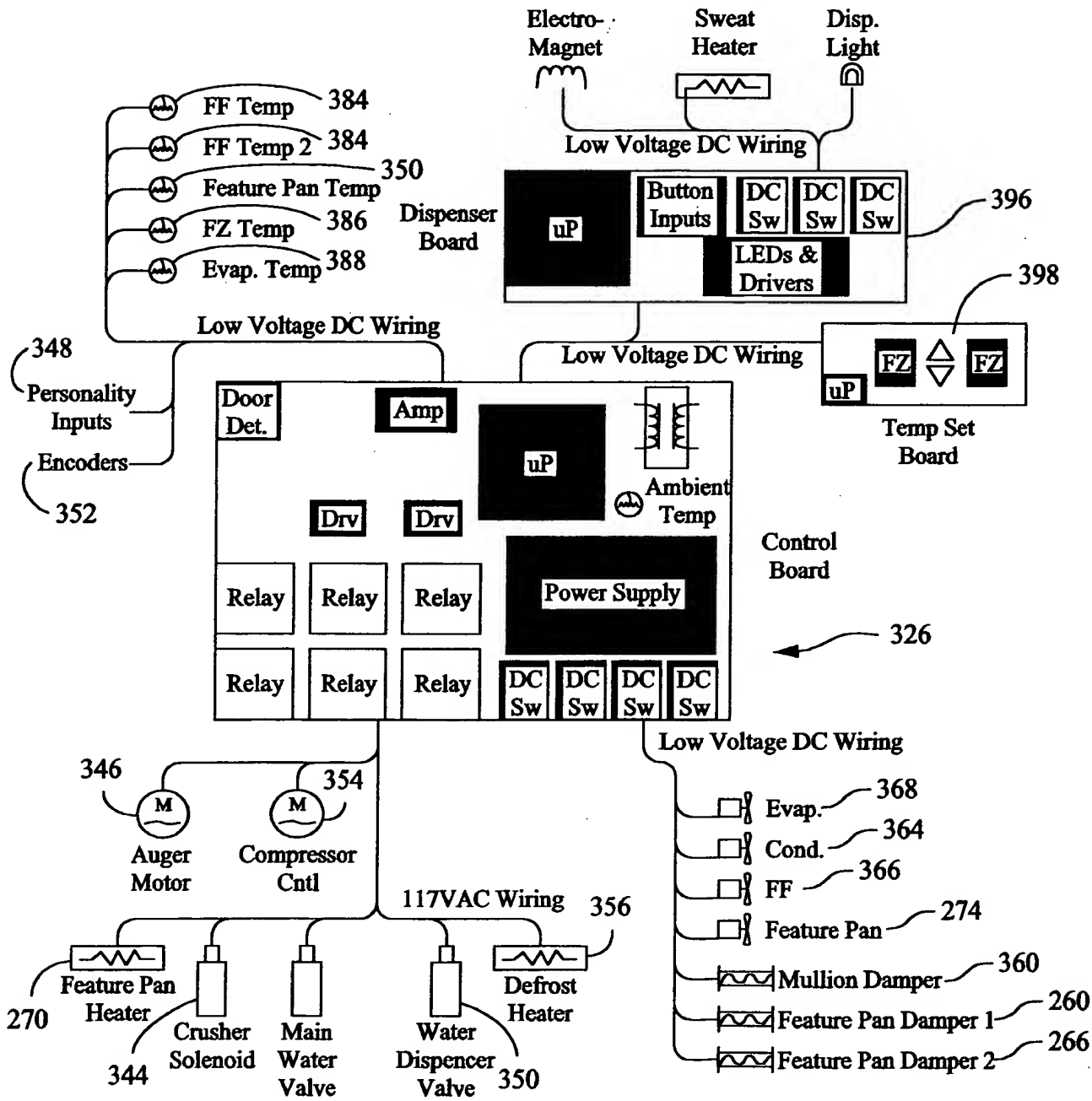


FIG. 10



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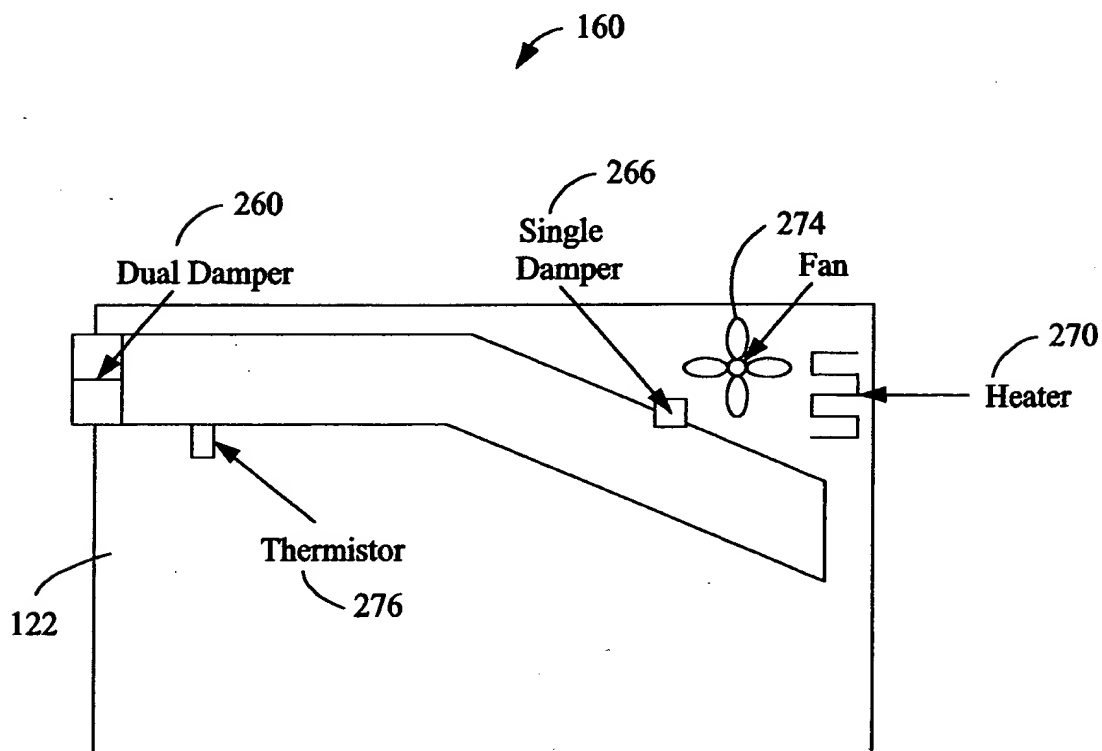


FIG. 11



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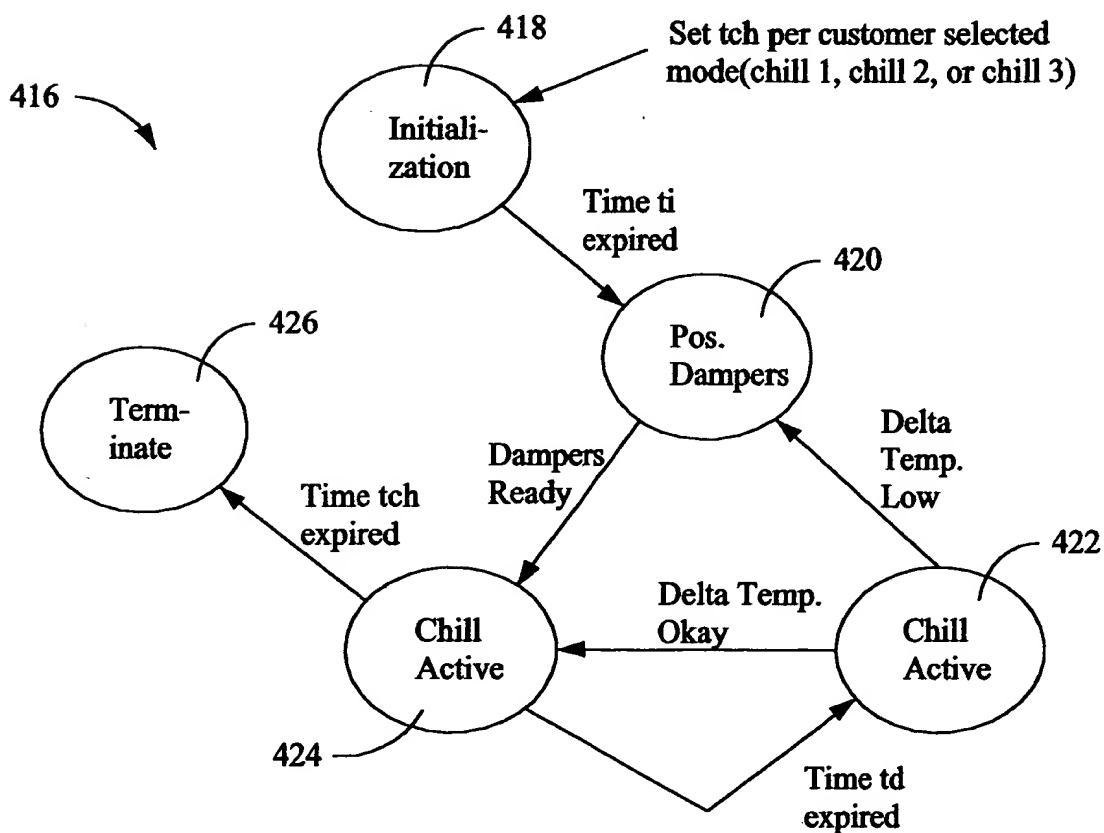
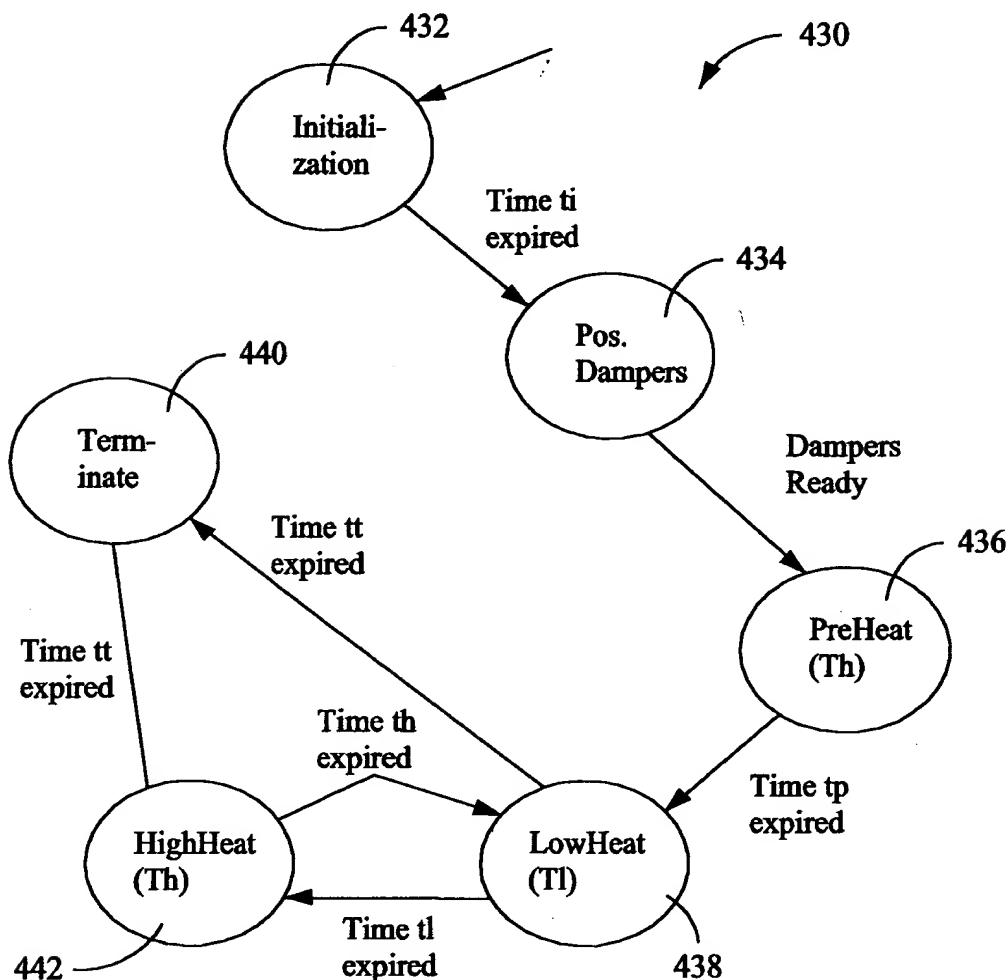


FIG. 12



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Initialization: Shuts off heater and turns on fan. This mode is implemented so that the customer interface LED that is wired in parallel with the fan will turn on as soon as the button is hit. Time t_i is the initialization time and will typically be approximately one minute.

Pos. Dampers: This state shuts off the fan, sets the single damper open then closes the dual damper. It then turns the fan back on. This is done for power management

PreHeat: This state regulates the pan temperature

LowHeat

HighHeat:

Terminate: This mode closes both dampers and shuts off the fan then returns to idle.

FIG. 13



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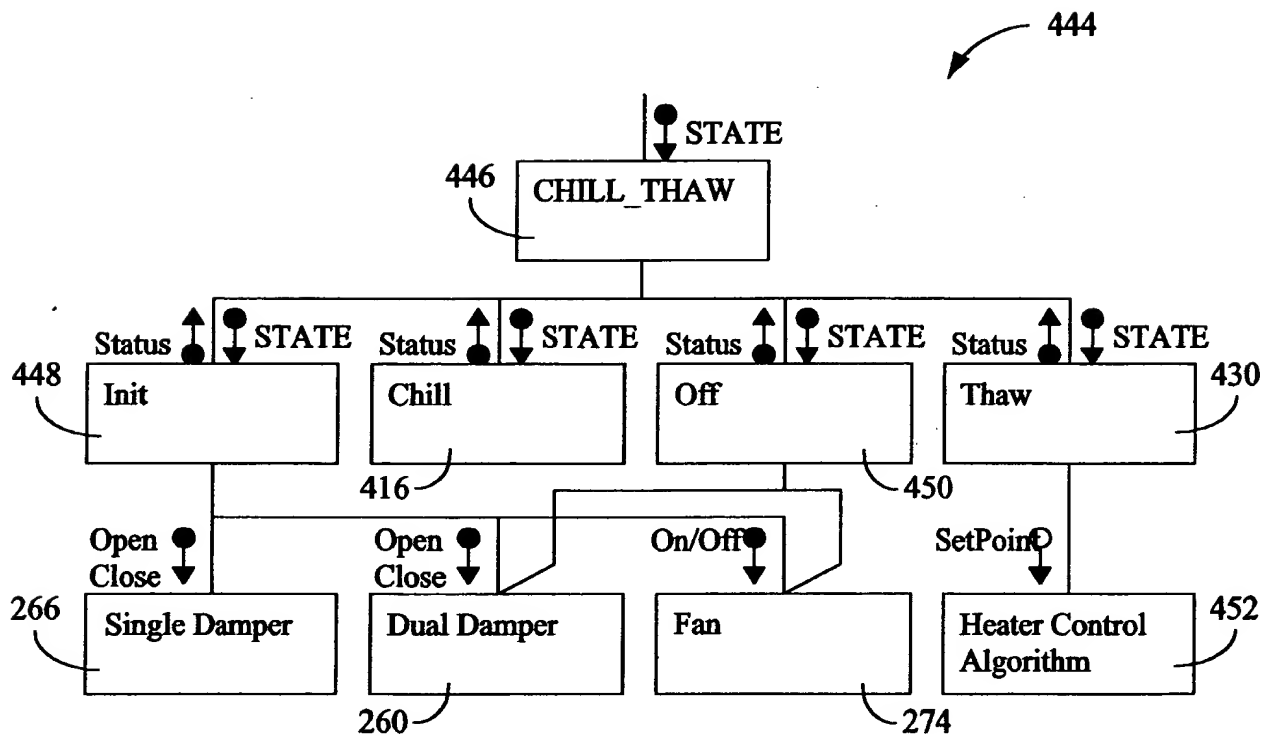
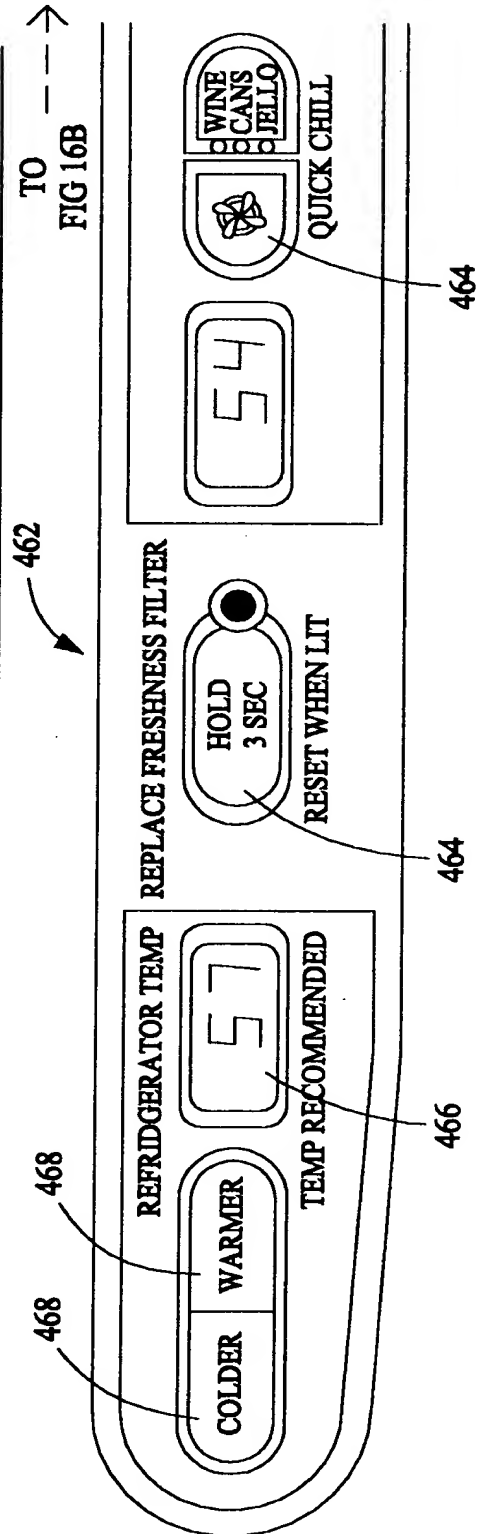
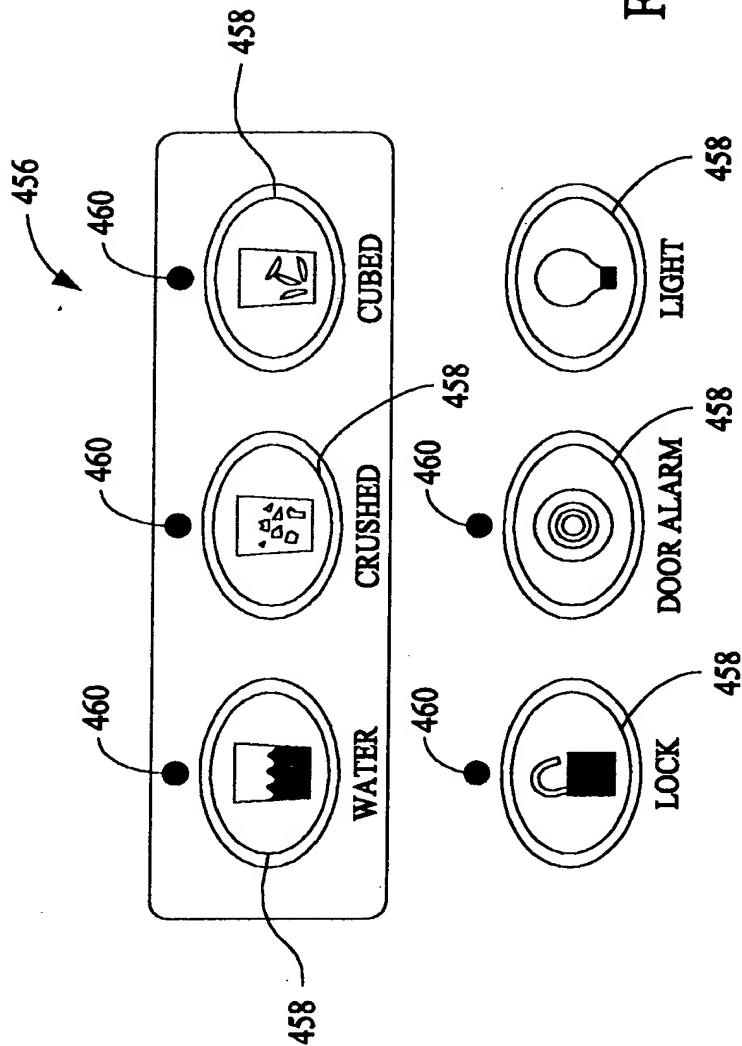


FIG. 14



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TO
FIG 16A

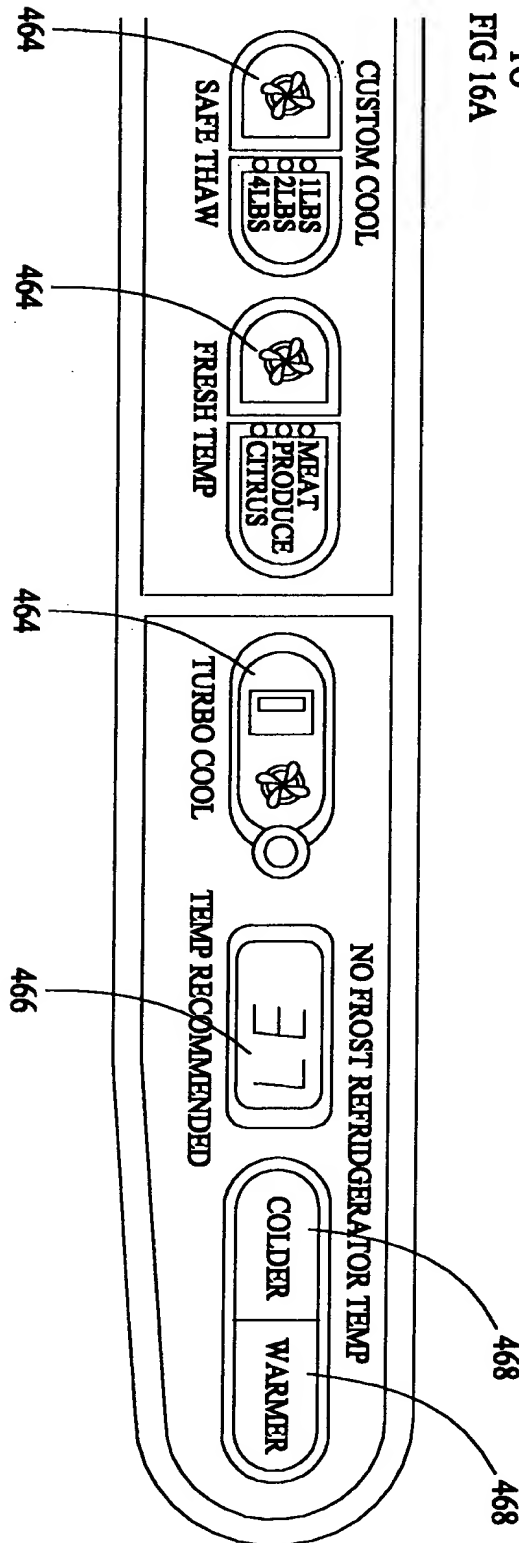


FIG. 16B

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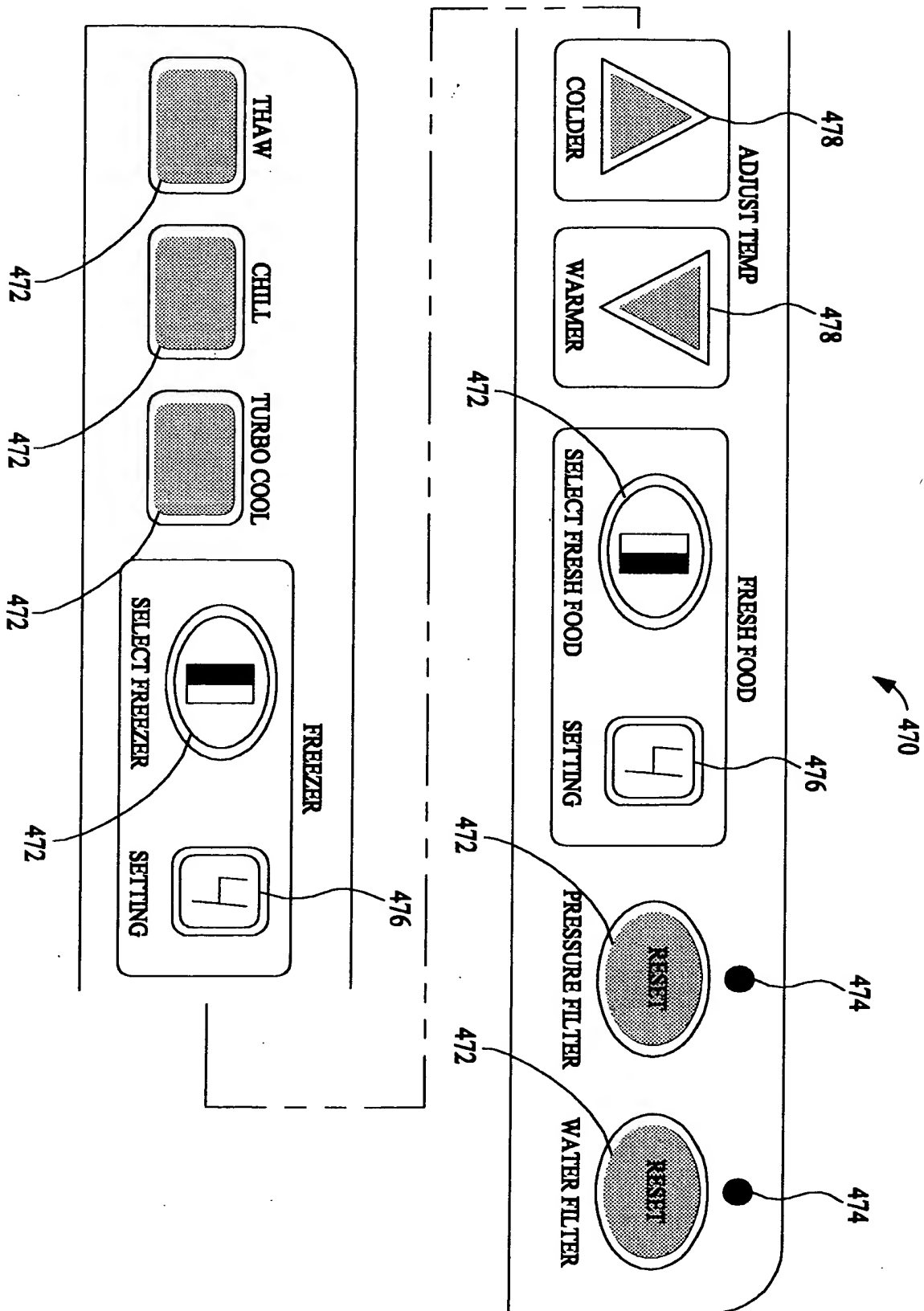
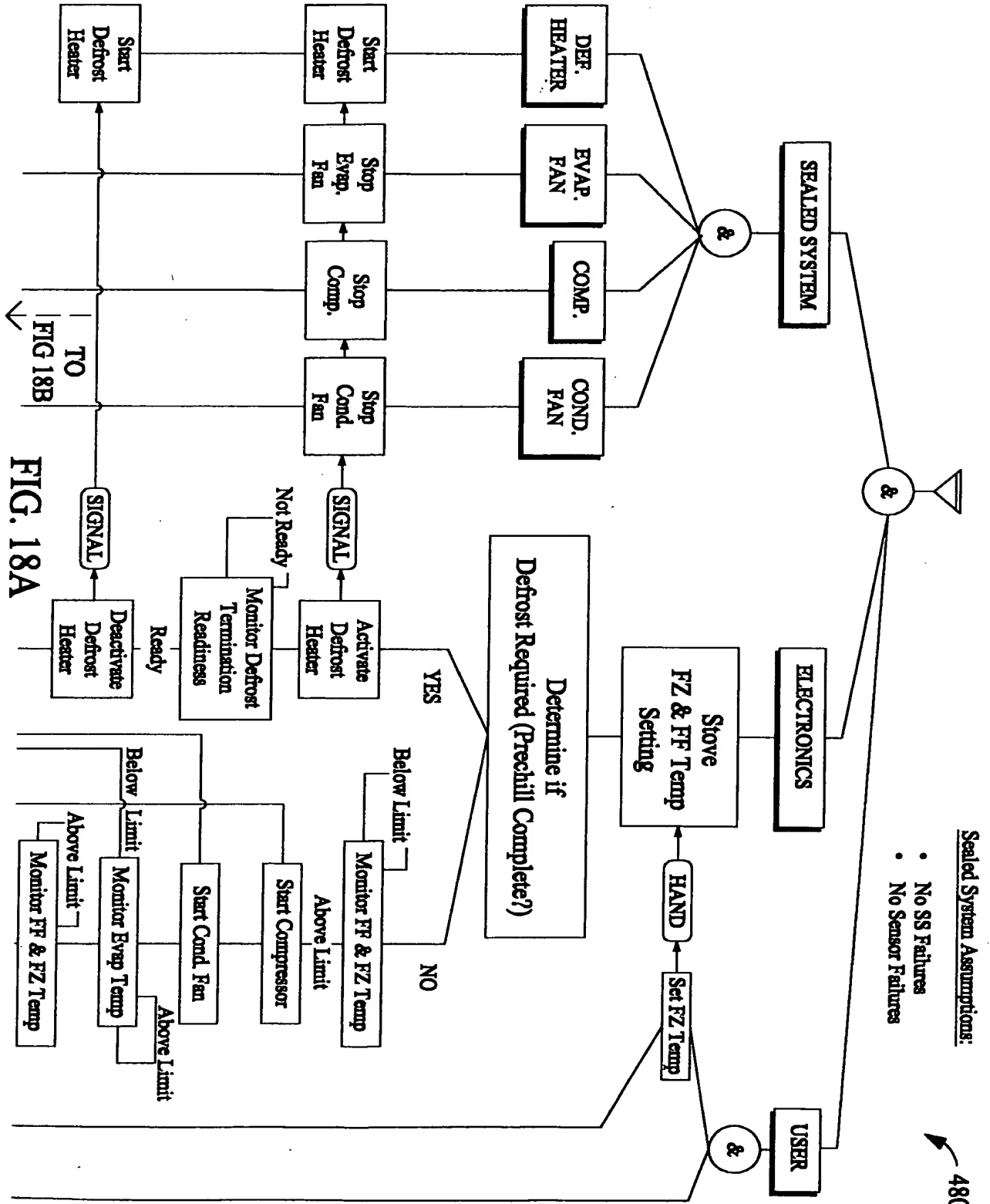


FIG. 17



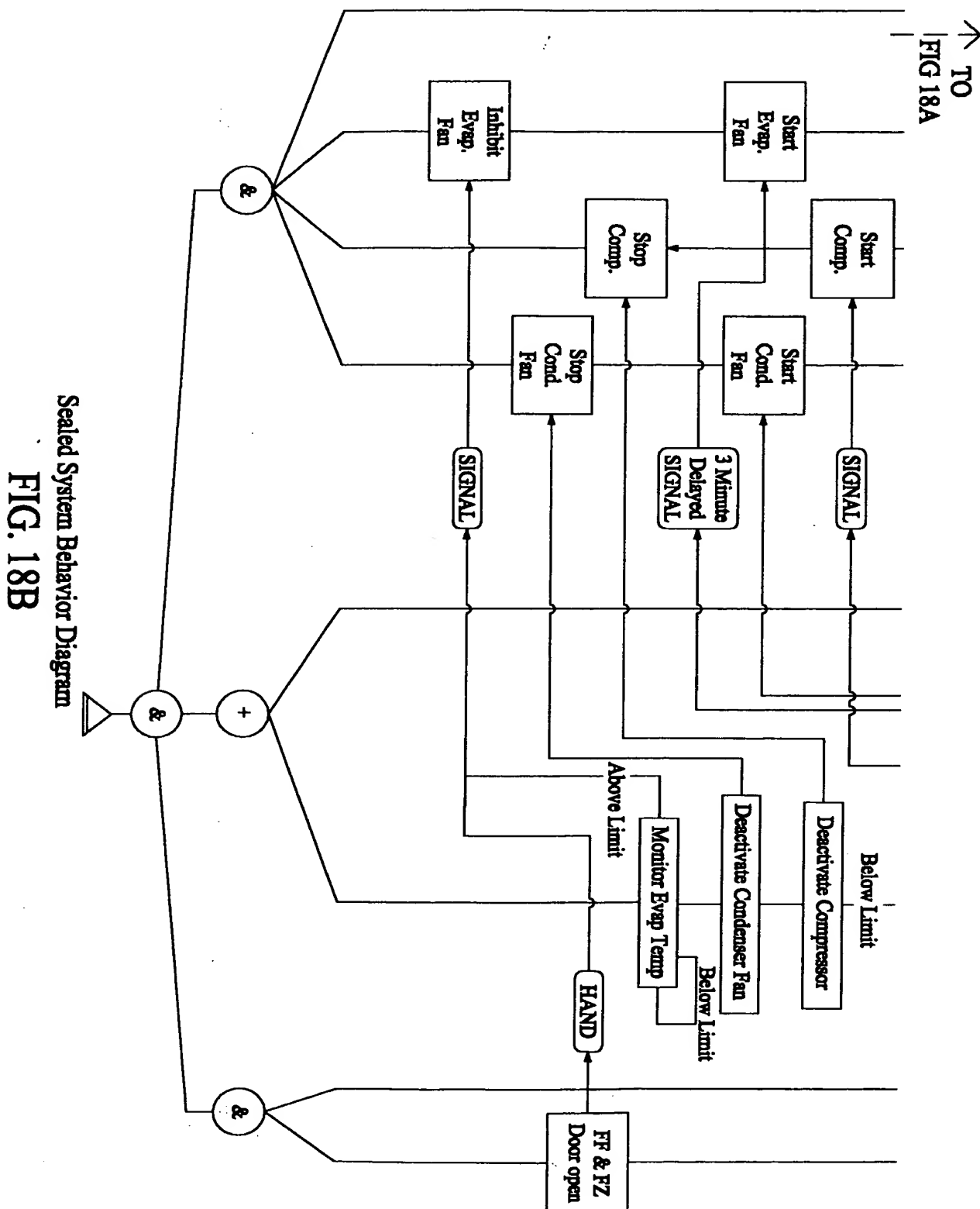
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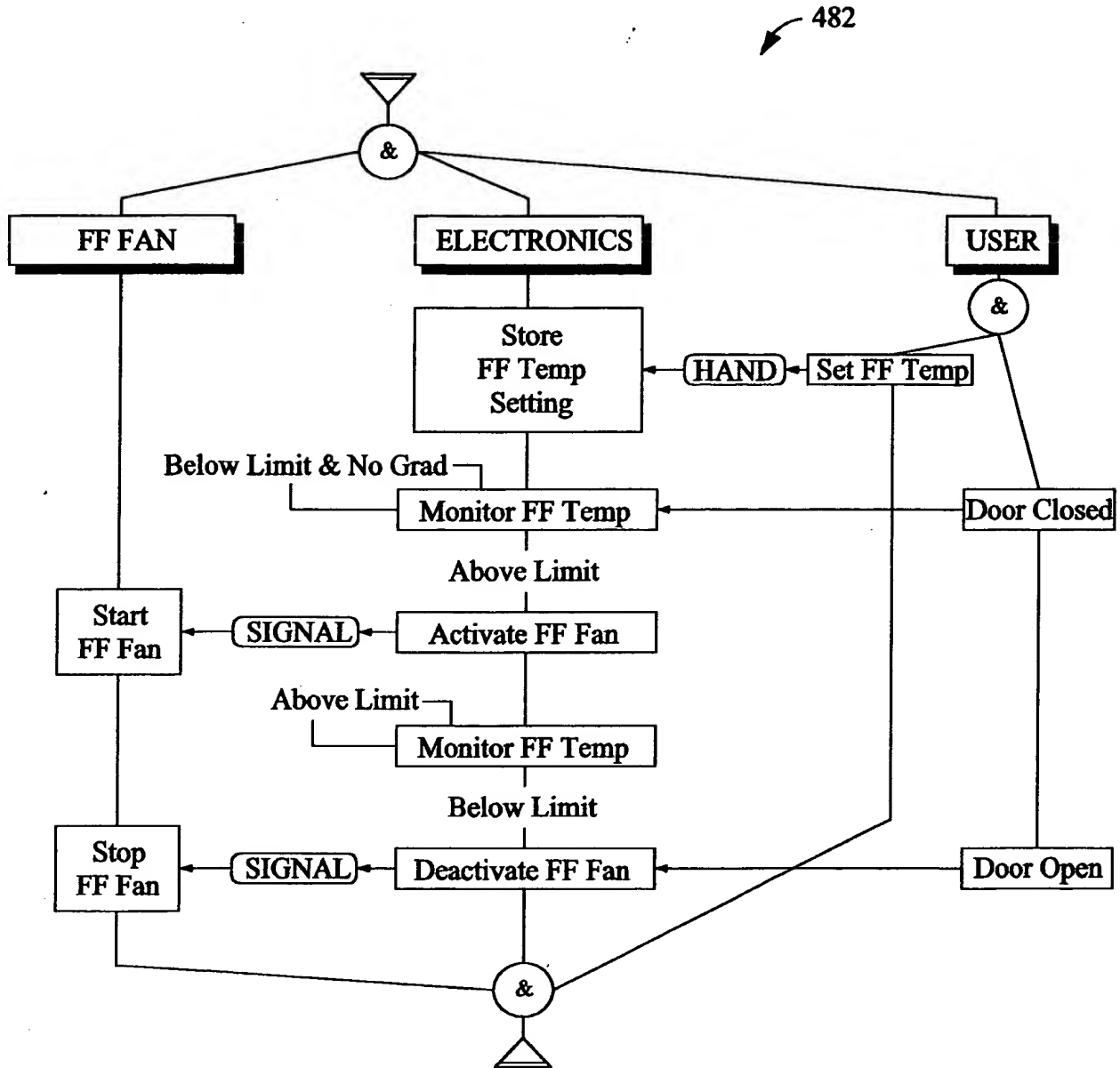


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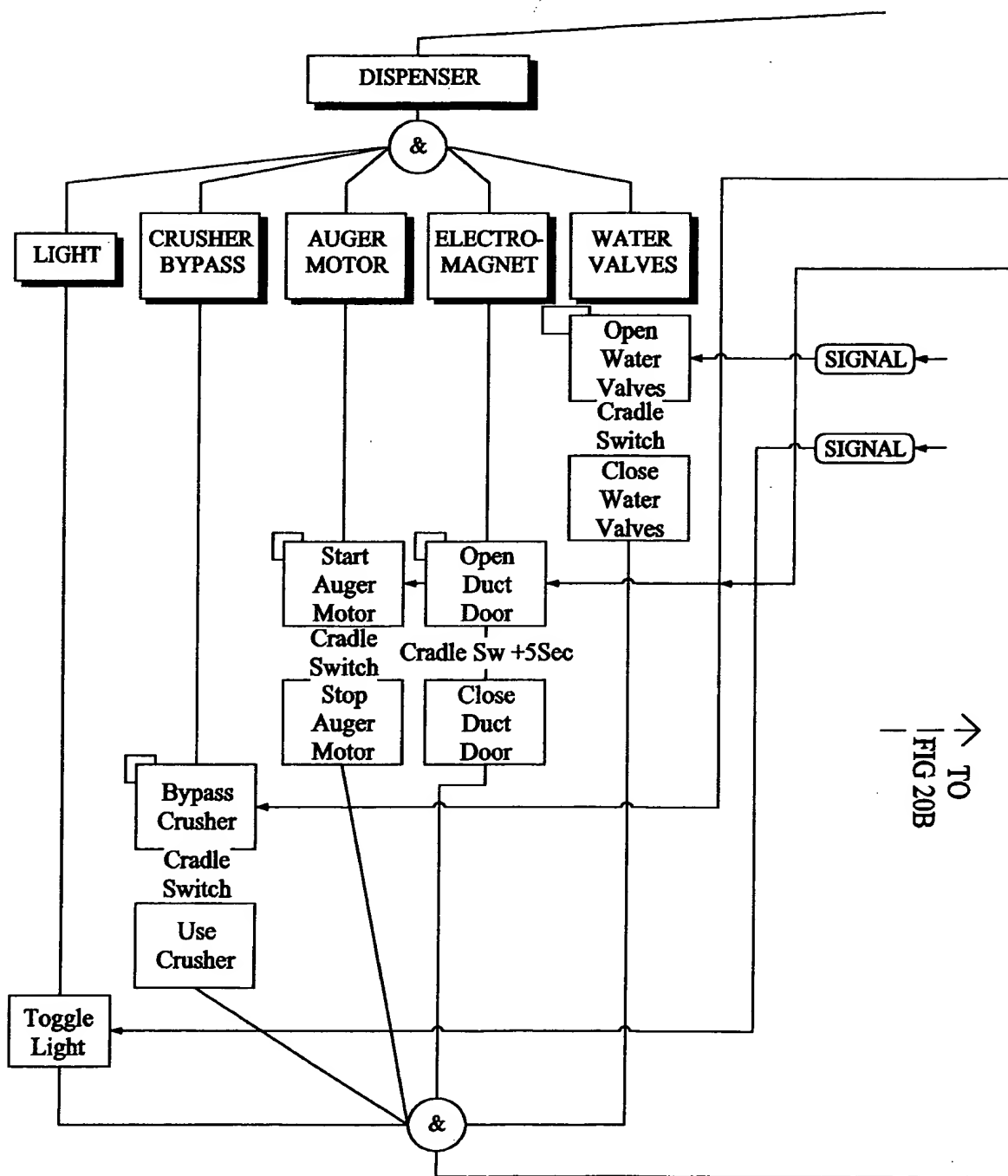
Fresh Food Fan Behavior Diagram

FIG. 19



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TO
FIG 20B

FIG. 20A

Dispenser Behavior

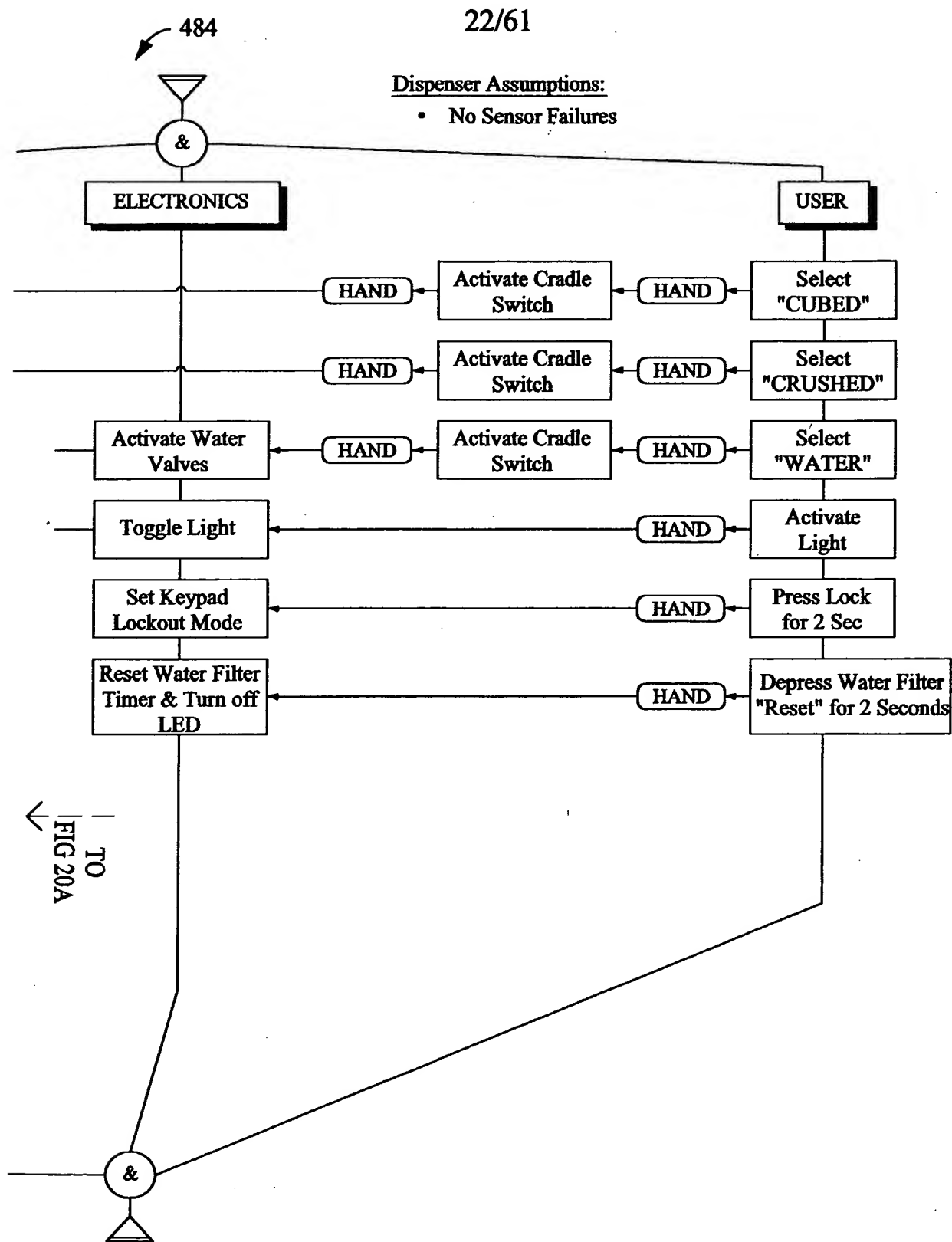
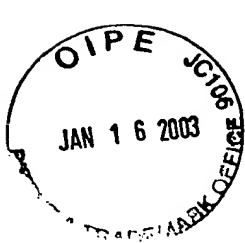


FIG. 20B



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Dispenser Assumptions:

- No Sensor Failures

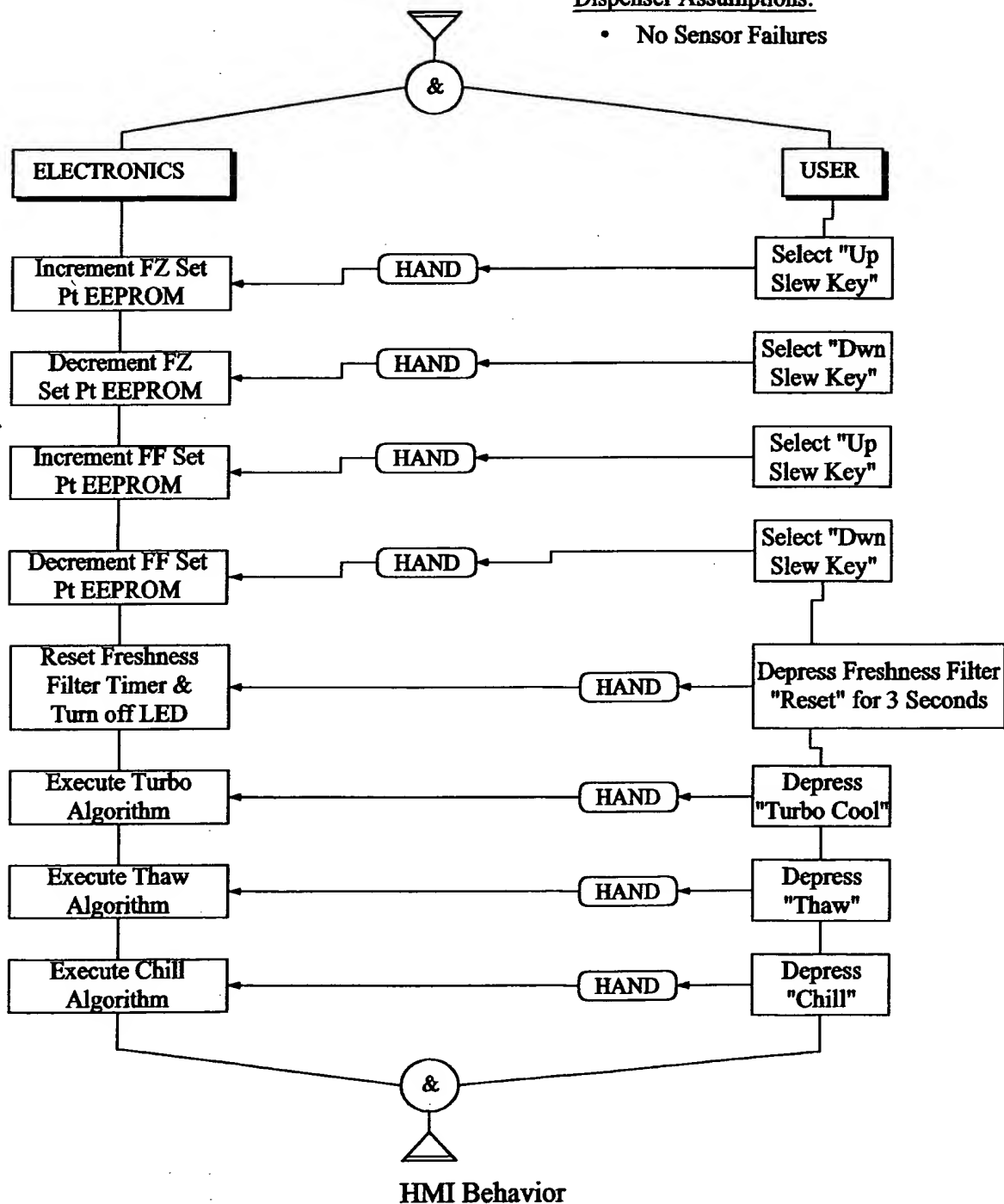
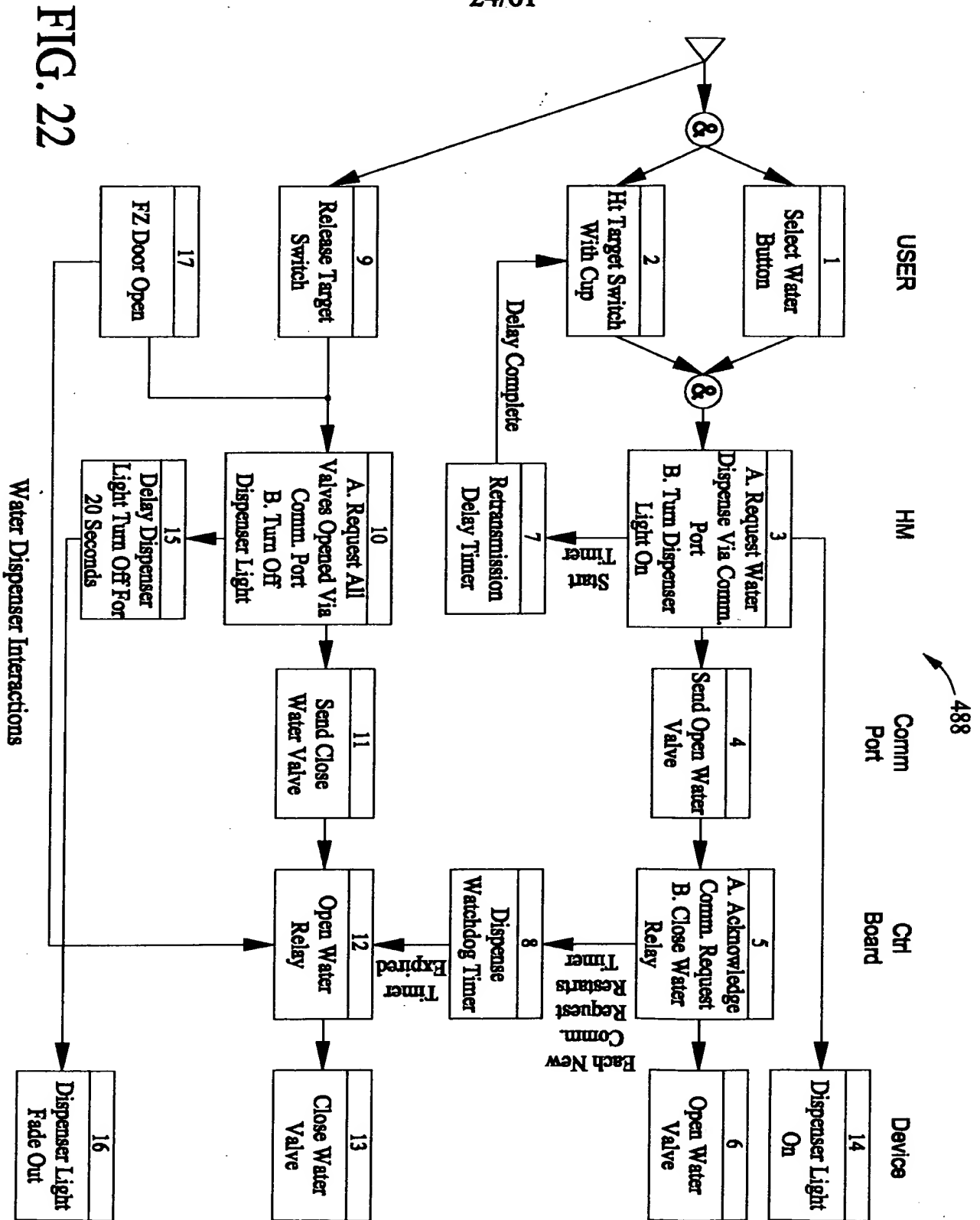


FIG. 21

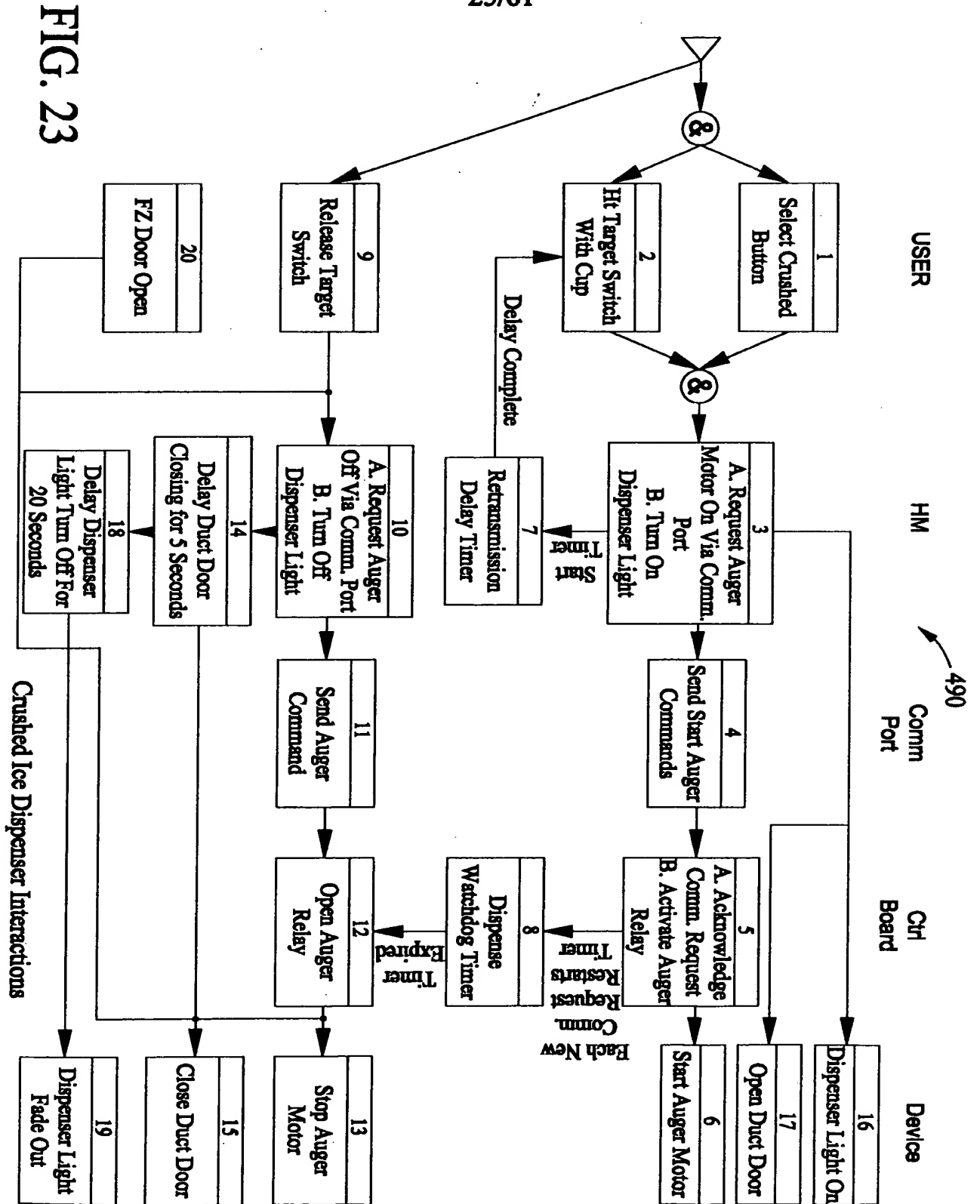


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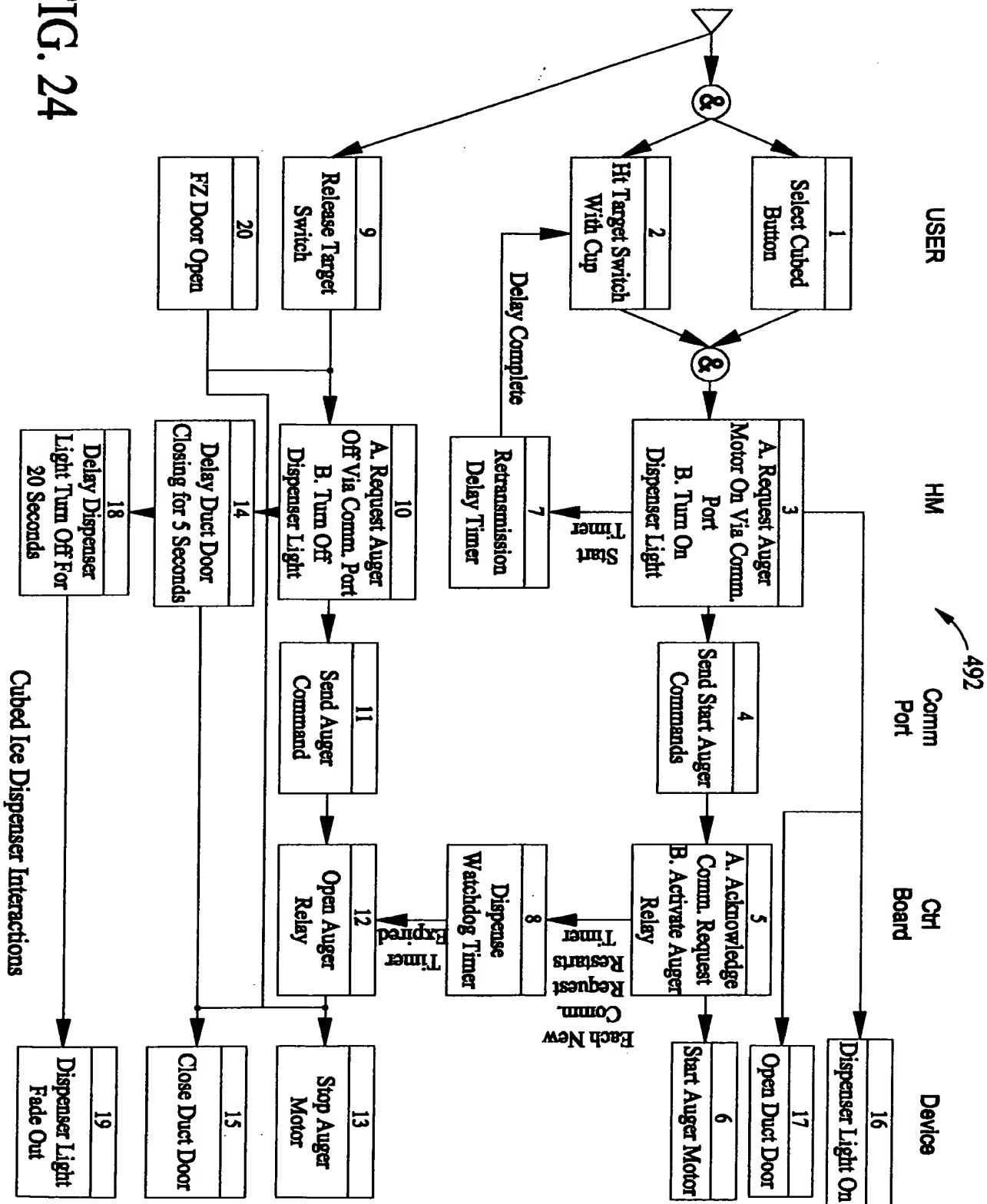
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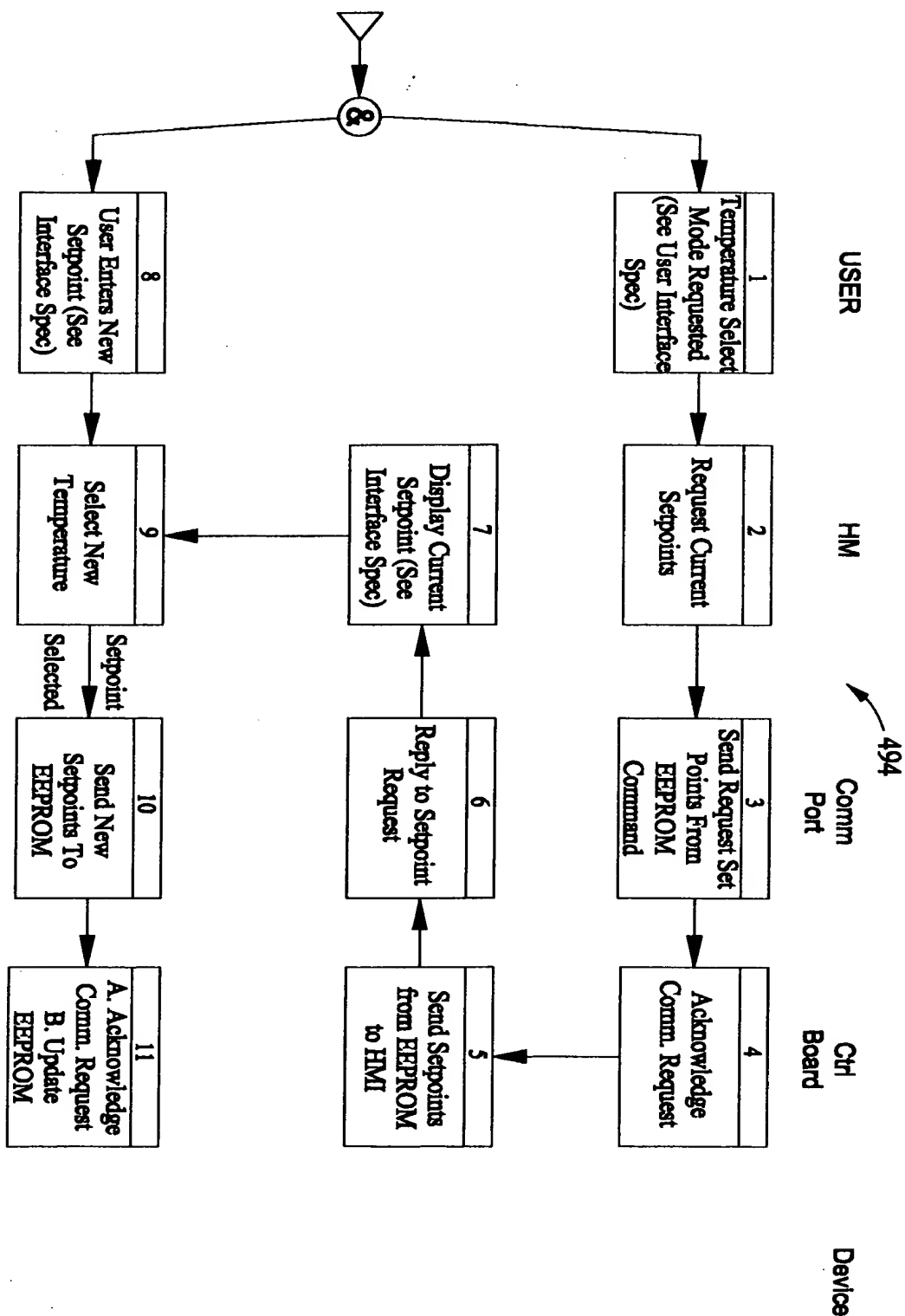
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FIG. 24





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NOTE: Setpoint Selected implies that the final selection has been made and that the selection has timed out.

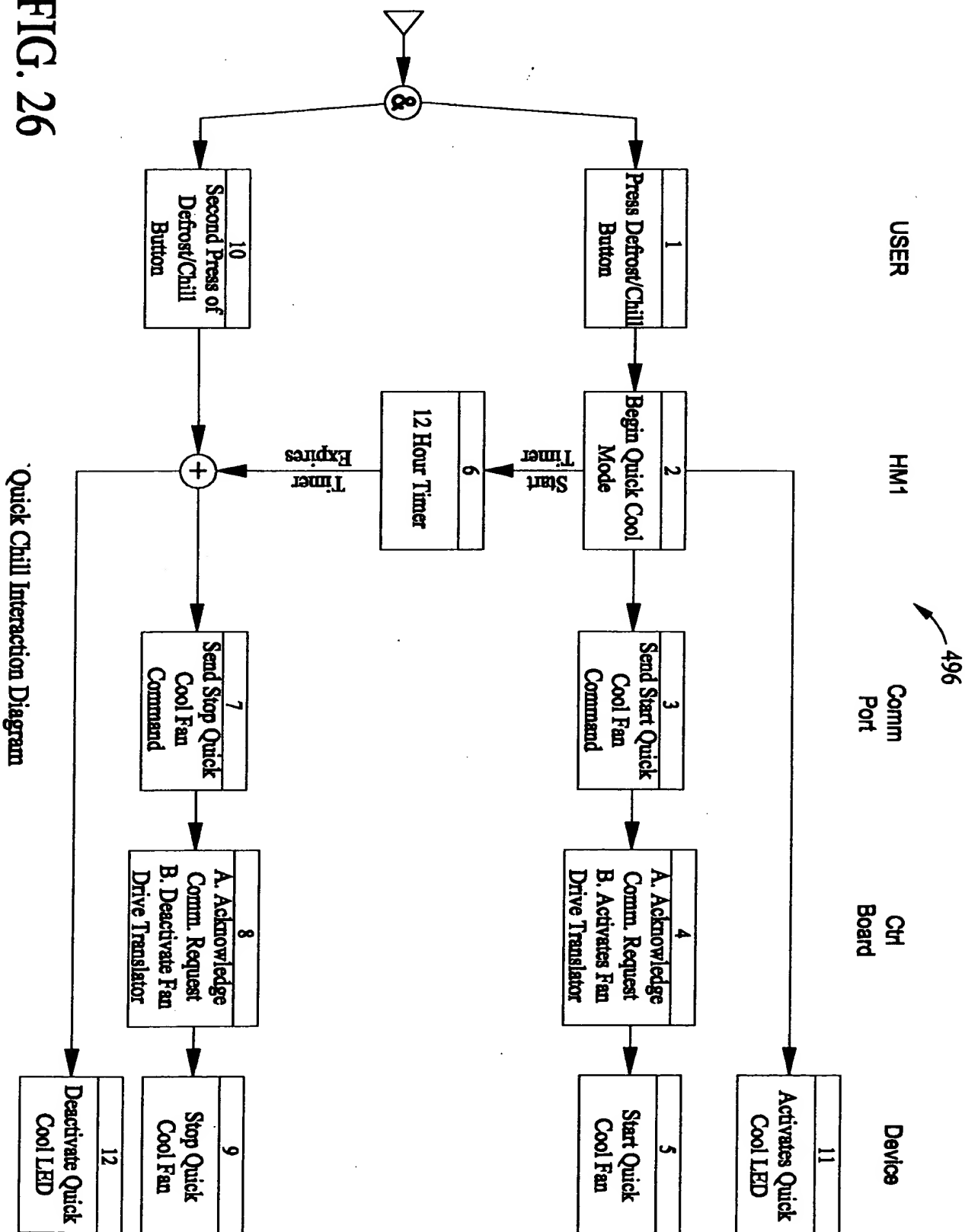
FIG. 25

Temperature Setting Interaction Diagrams



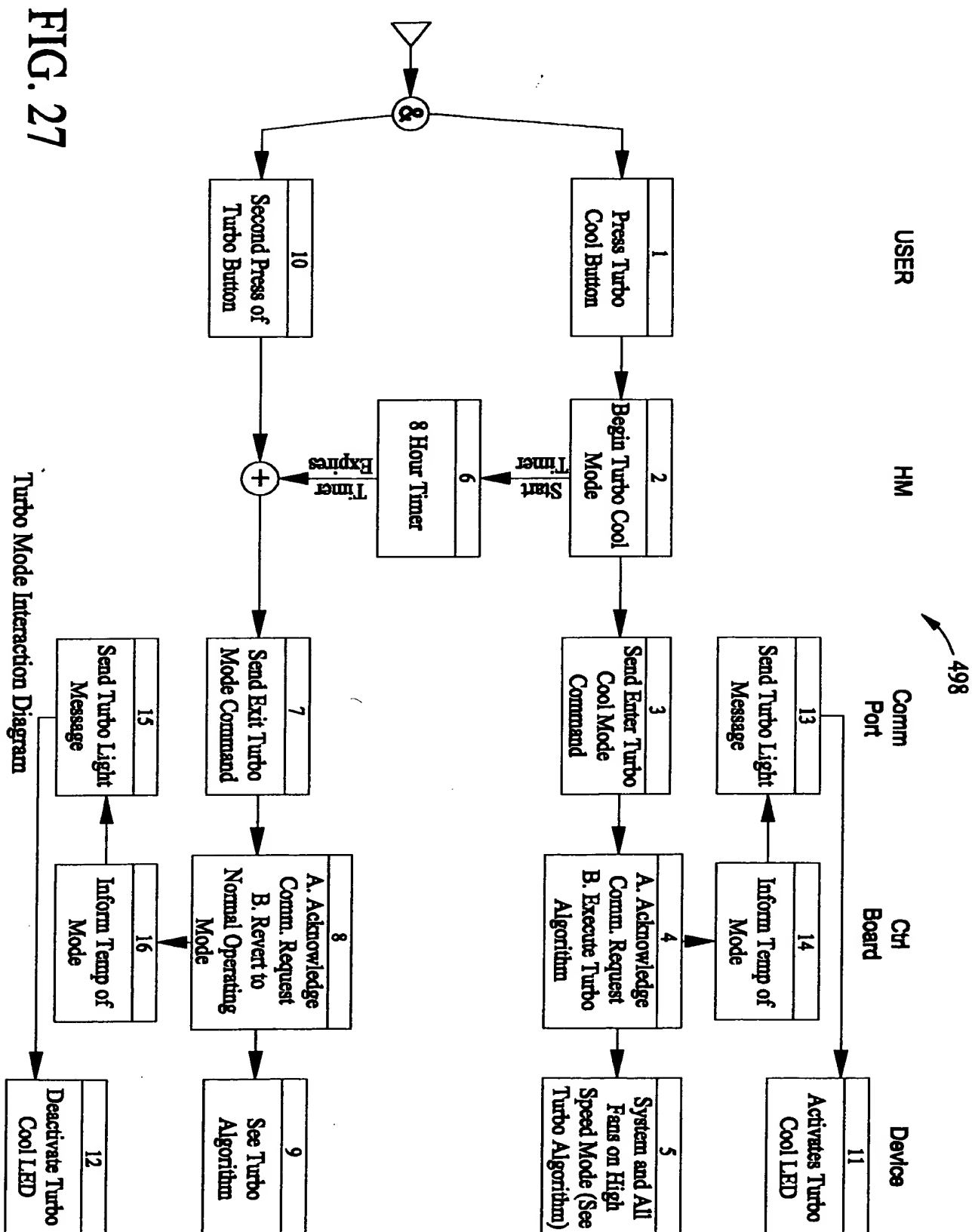
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FIG. 26



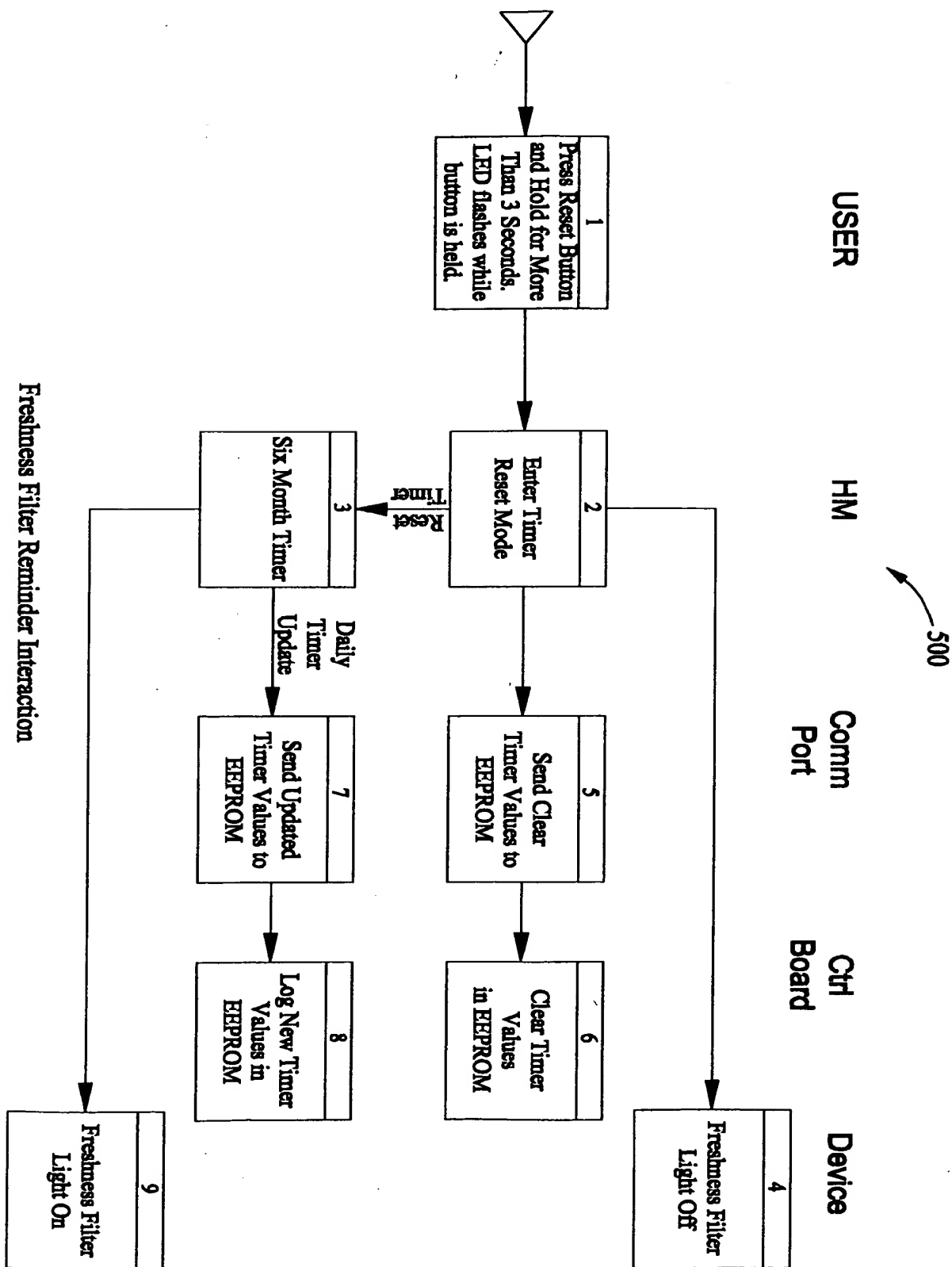


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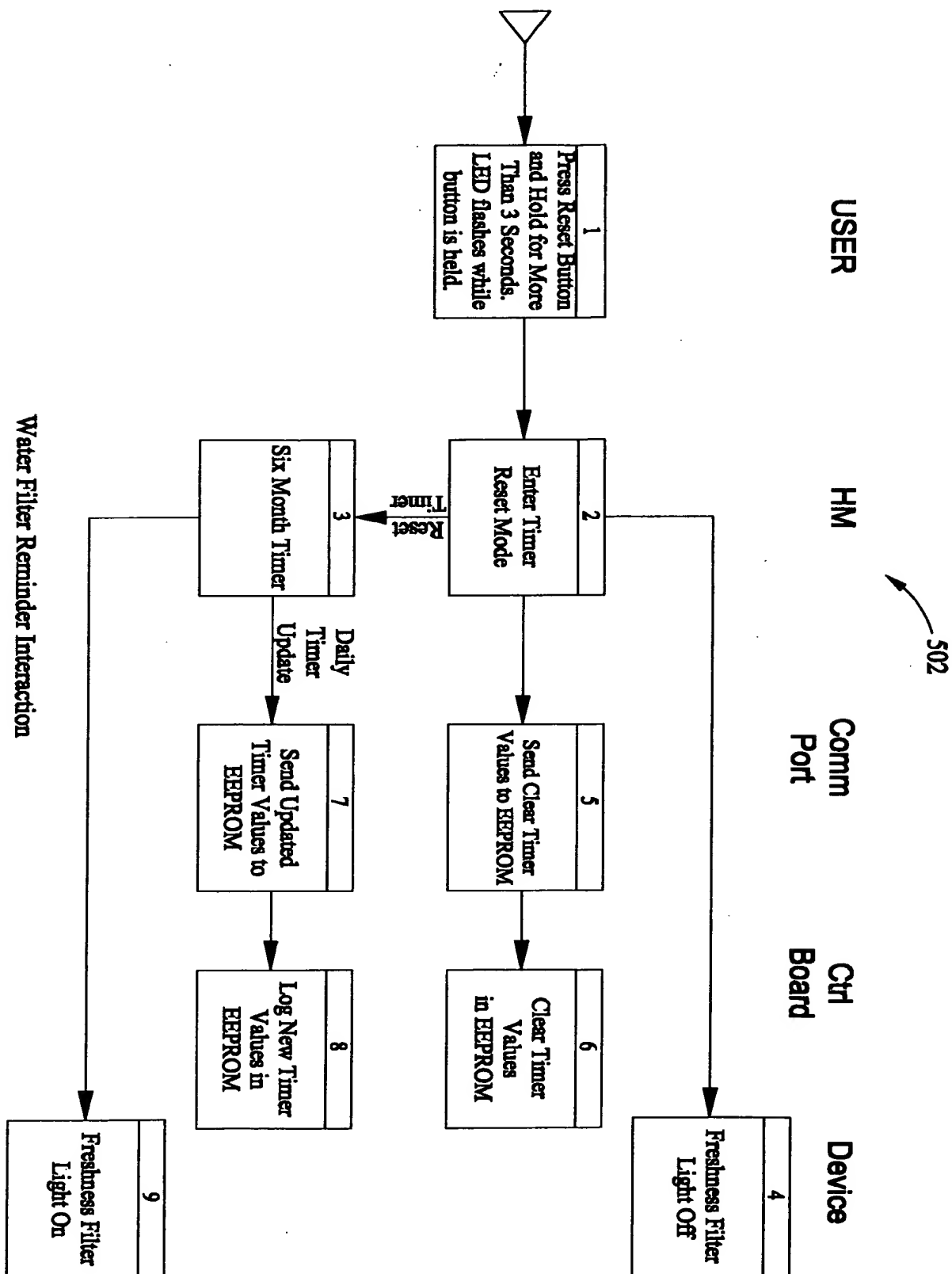


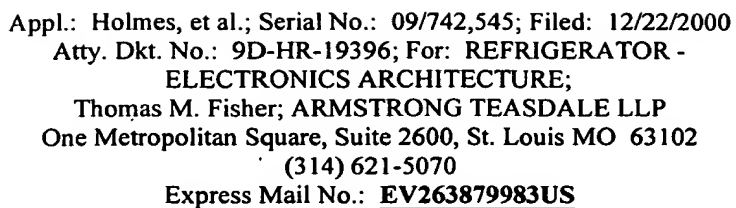
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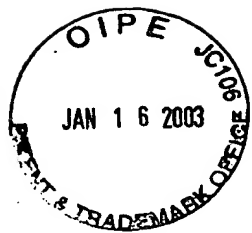




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FIG. 30



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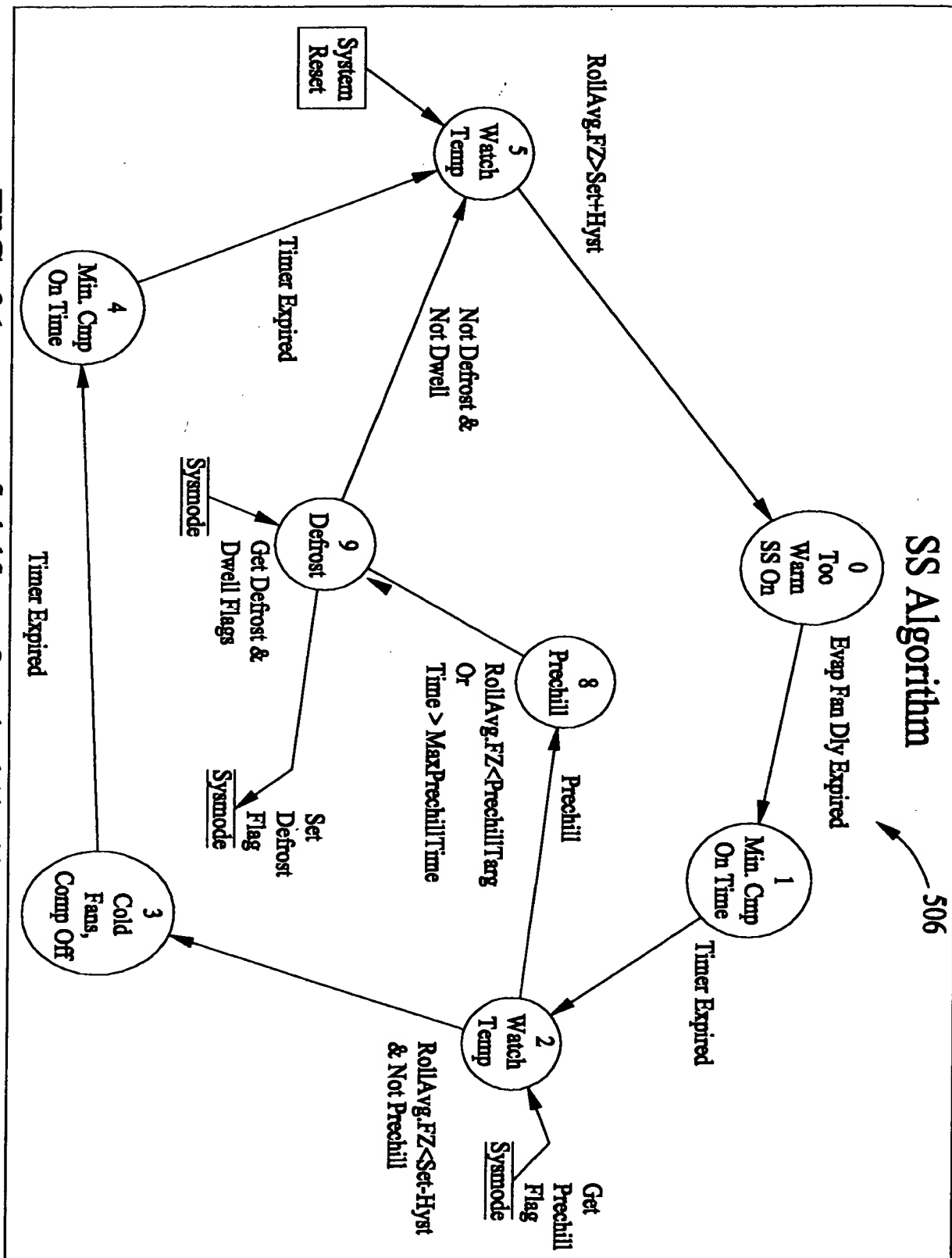
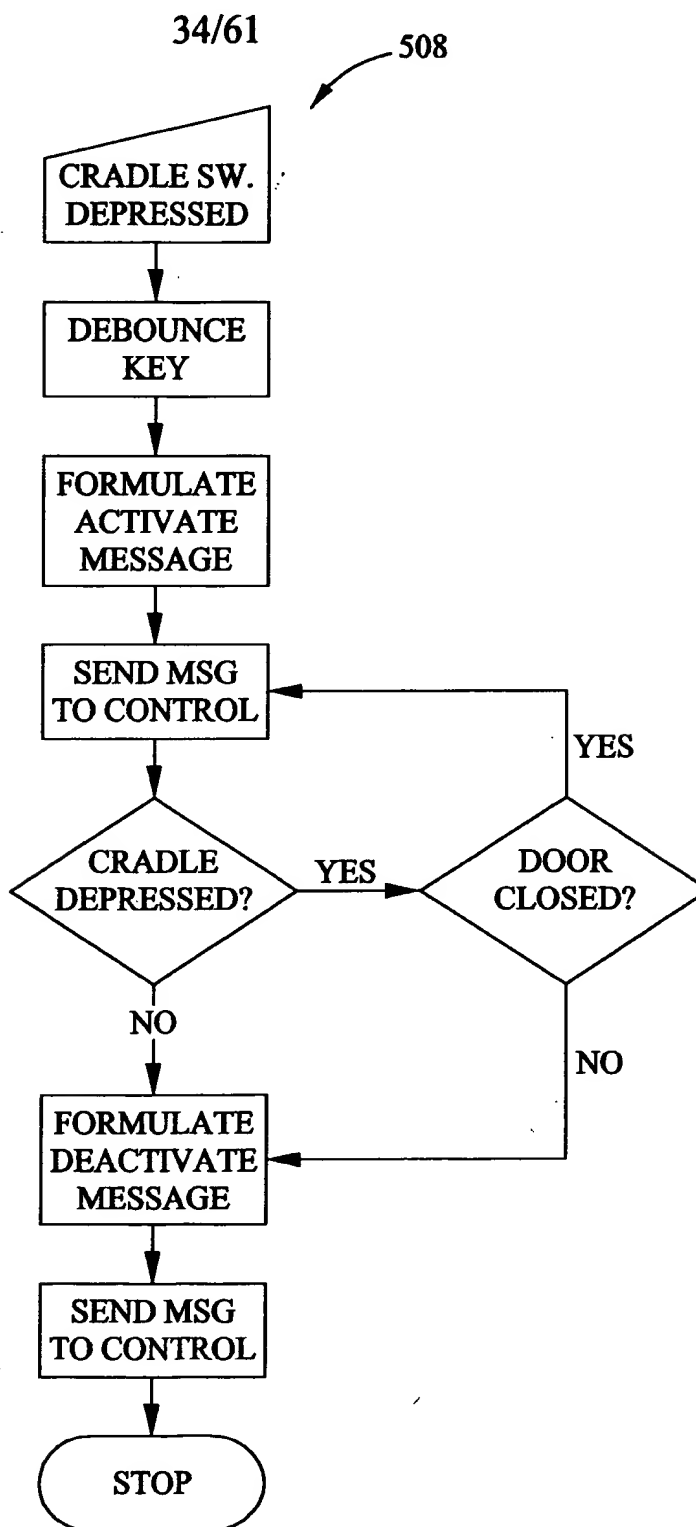


FIG. 31

Sealed System Operational Algorithm



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Dispenser Control Algorithm

FIG. 32

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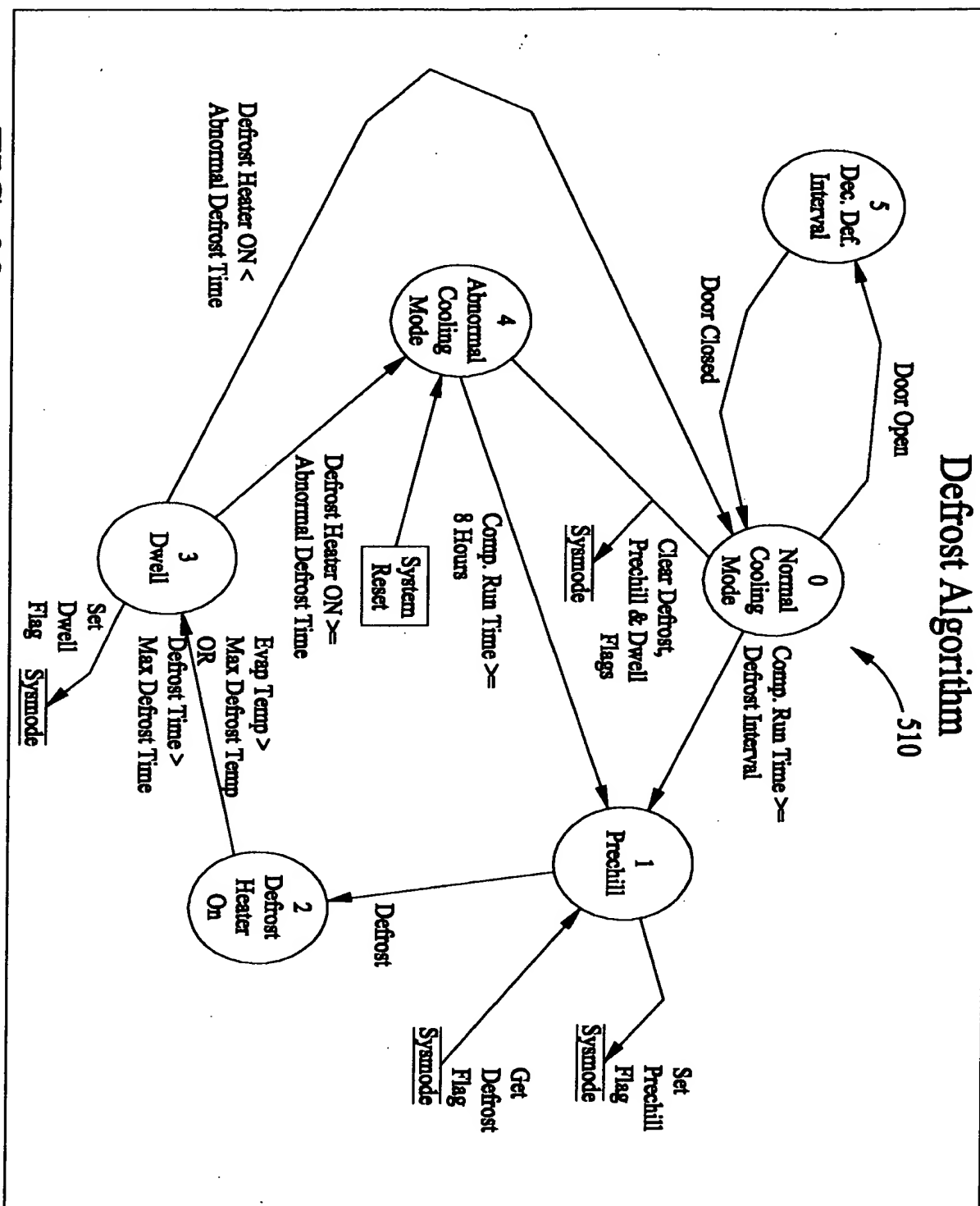


FIG. 33

Defrost Control State Diagram



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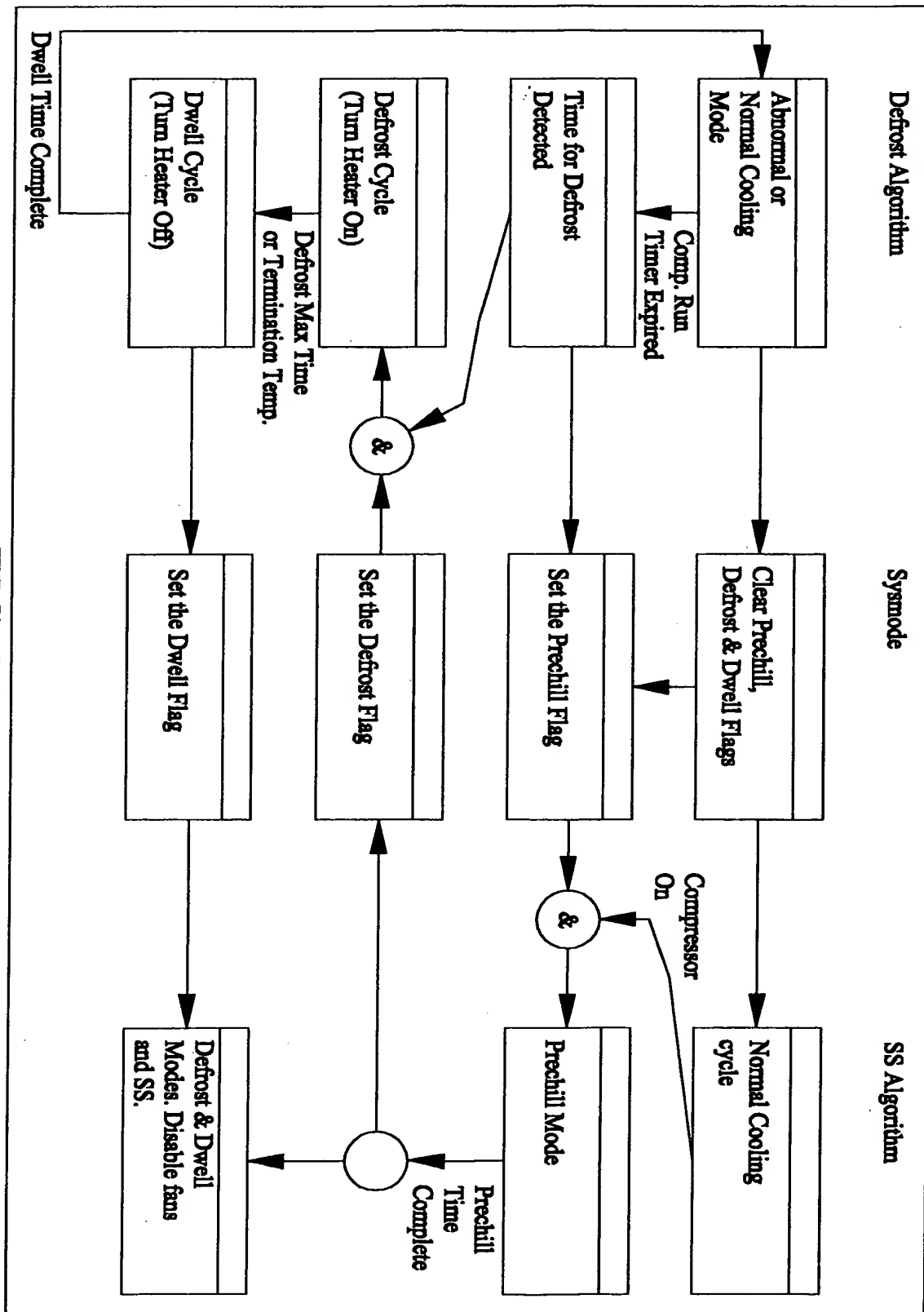


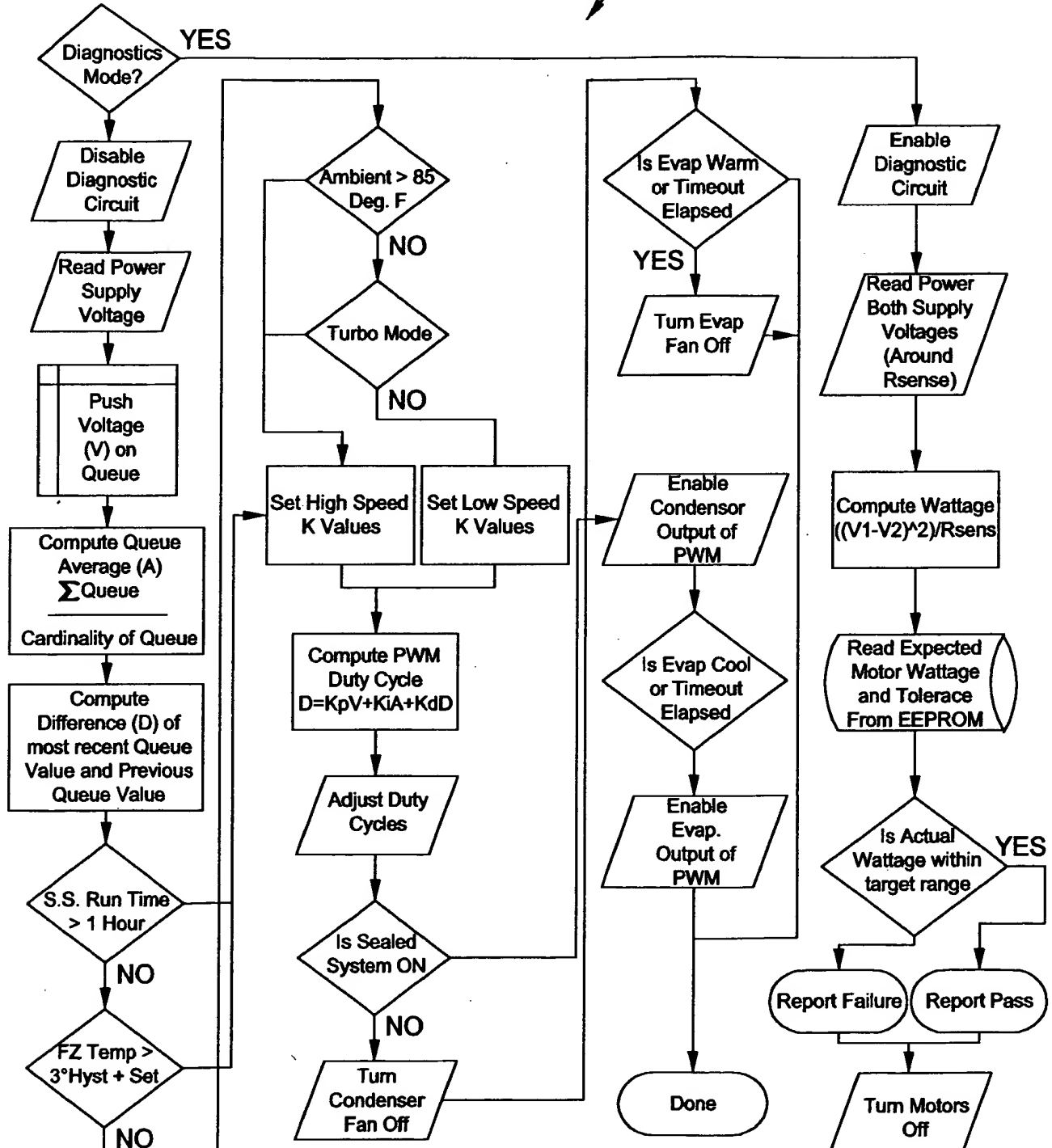
FIG. 34



Evap. & Cond. Fan Control:

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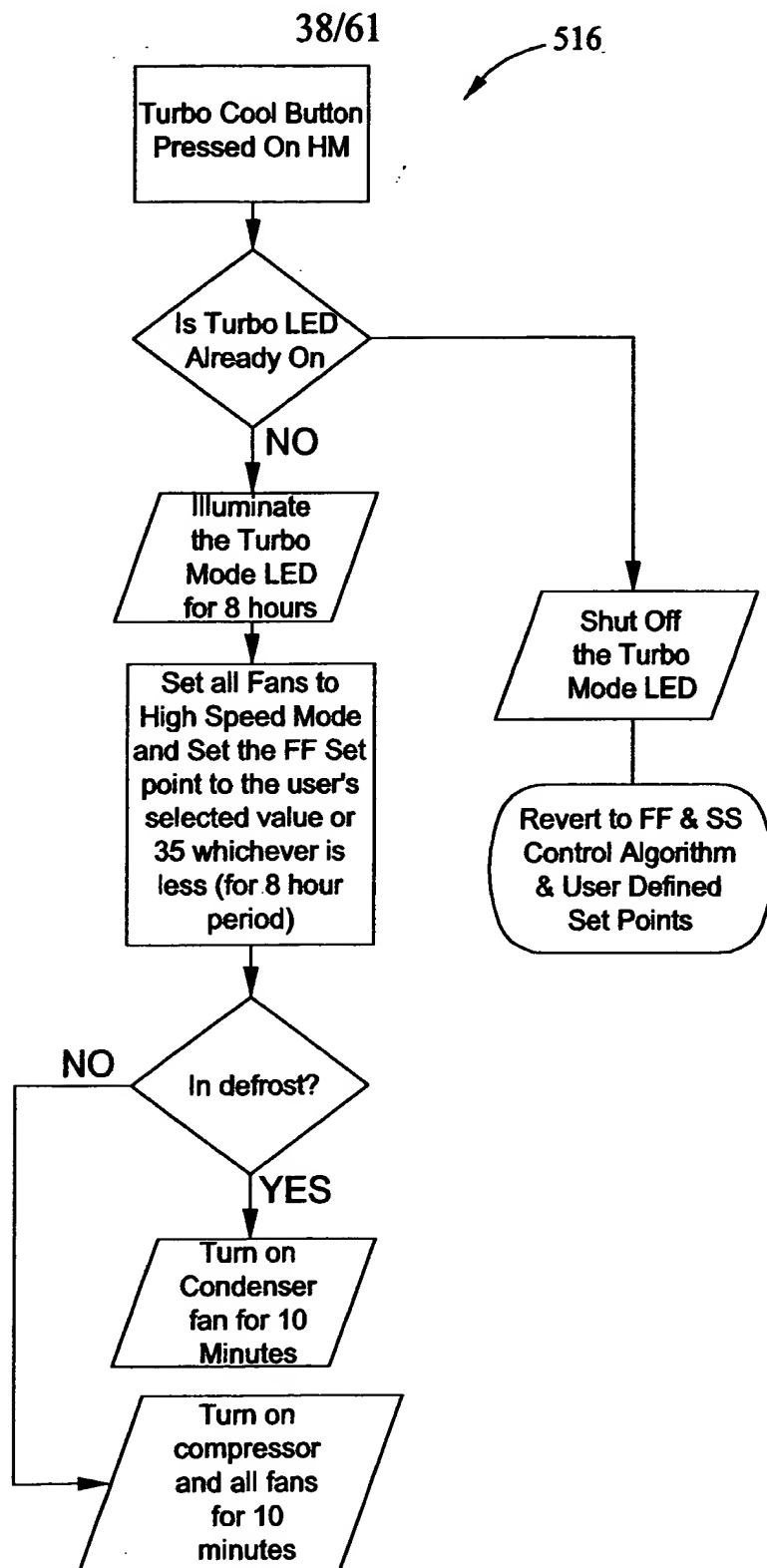
Fan Speed Control

- Notes:
1. The FF & Evaporator fans will shut off for the first five minutes that the door is open
 2. Only one fan at a time can be on at a time during diagnostics.
 3. Once the fan has been switched to high speed, it remains in that state until the operational cycle is complete.

FIG. 35



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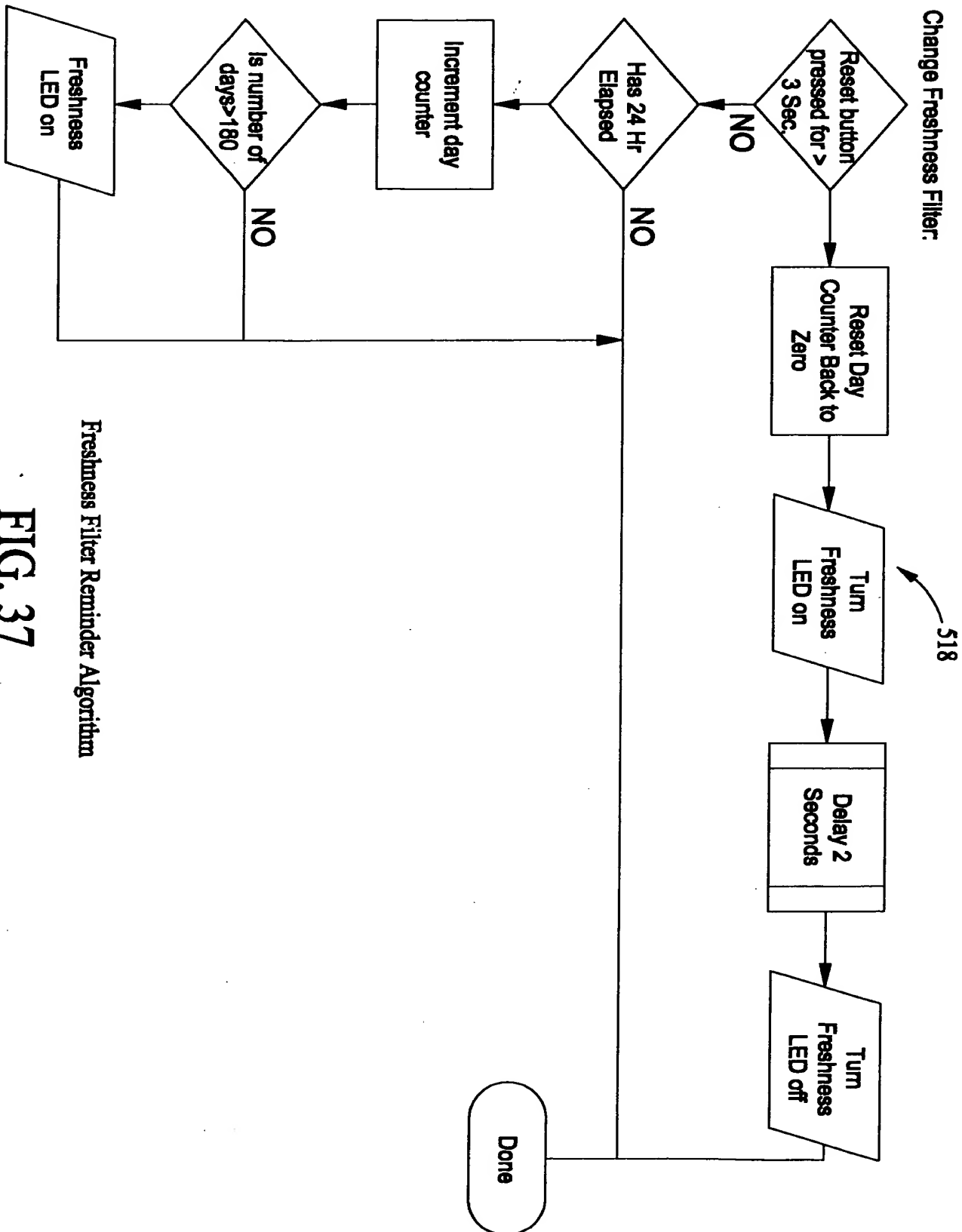
Turbo Cycle Algorithm

FIG. 36



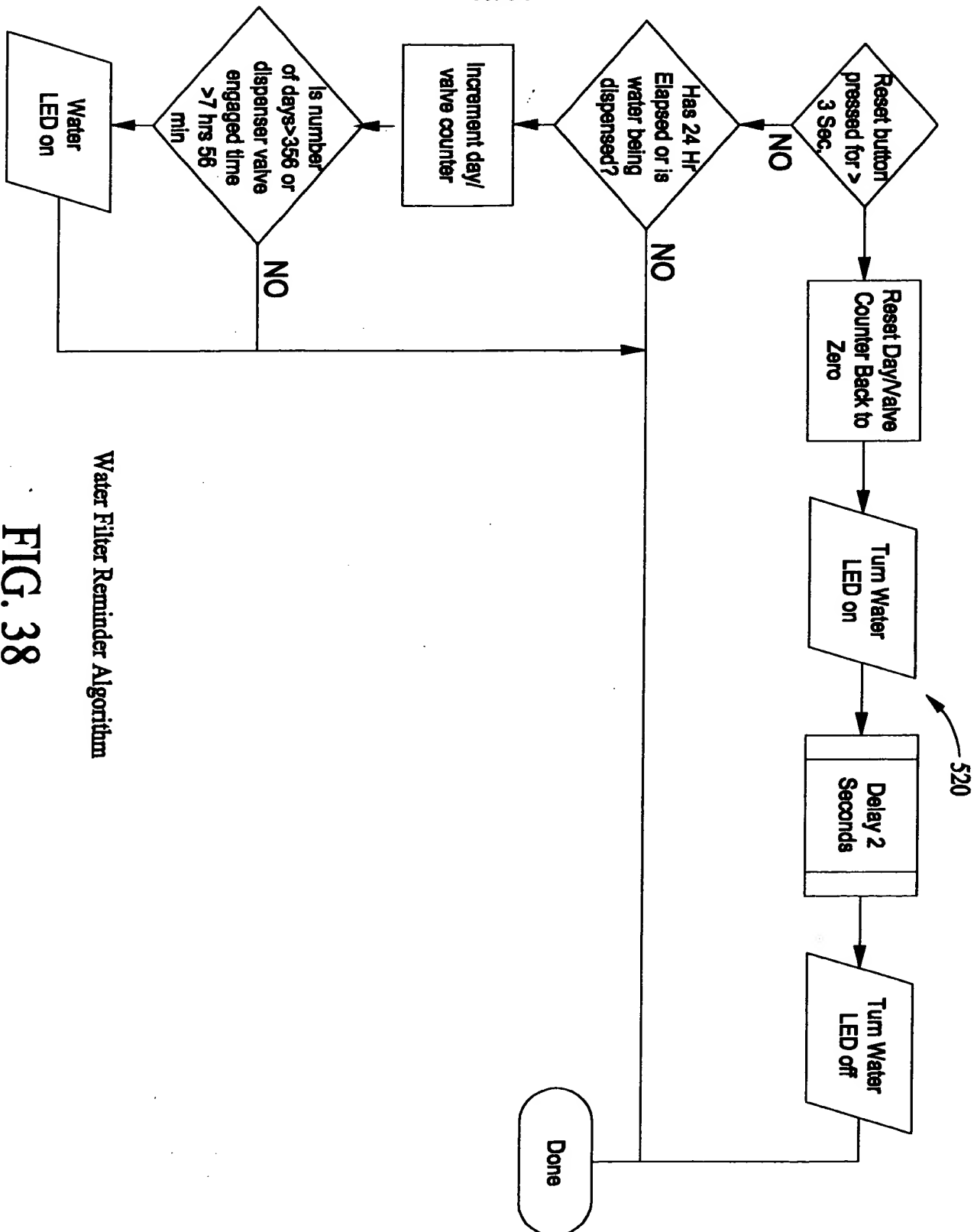
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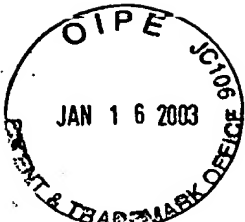


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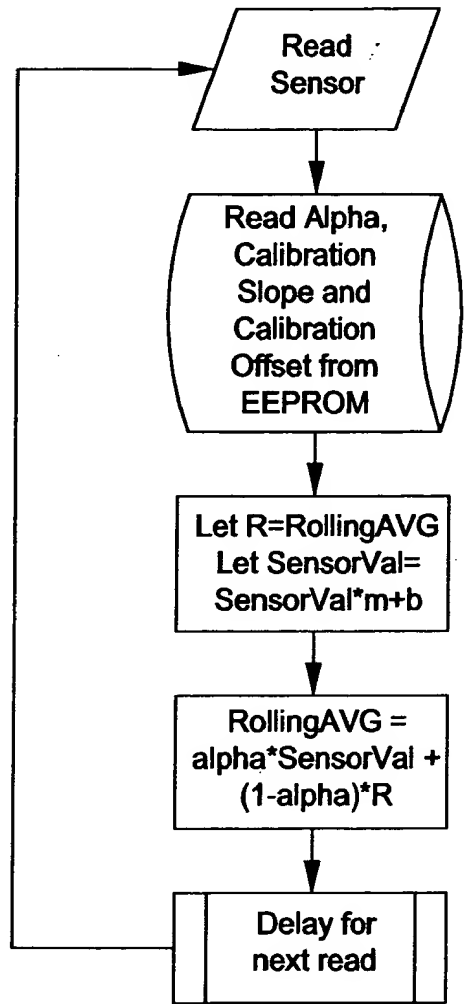
Water Filter Reminder Algorithm

FIG. 38



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SENSOR READ AND ROLLING AVERAGE ALGO: 522



NOTE:
Fresh food average uses this algorithm twice to create a 2nd pole filter.

FIG. 39

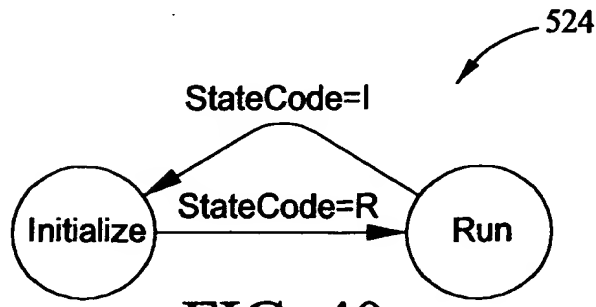


FIG. 40

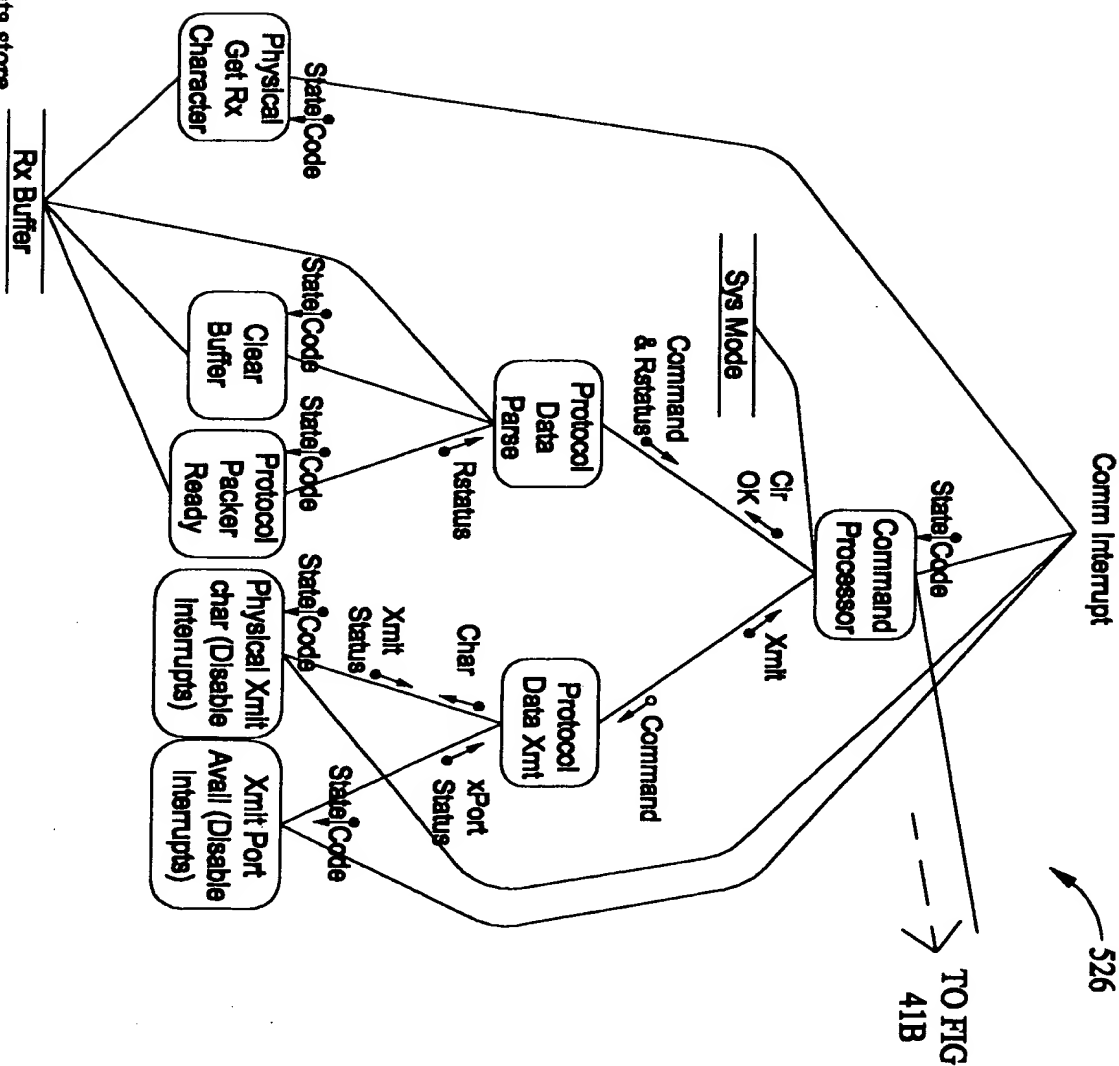


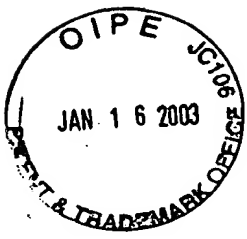
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Note: Any Routine is allowed to read a data store
The command processor can read or write
any data store.
Dashed line indicates a path for initialization only

FIG. 41A





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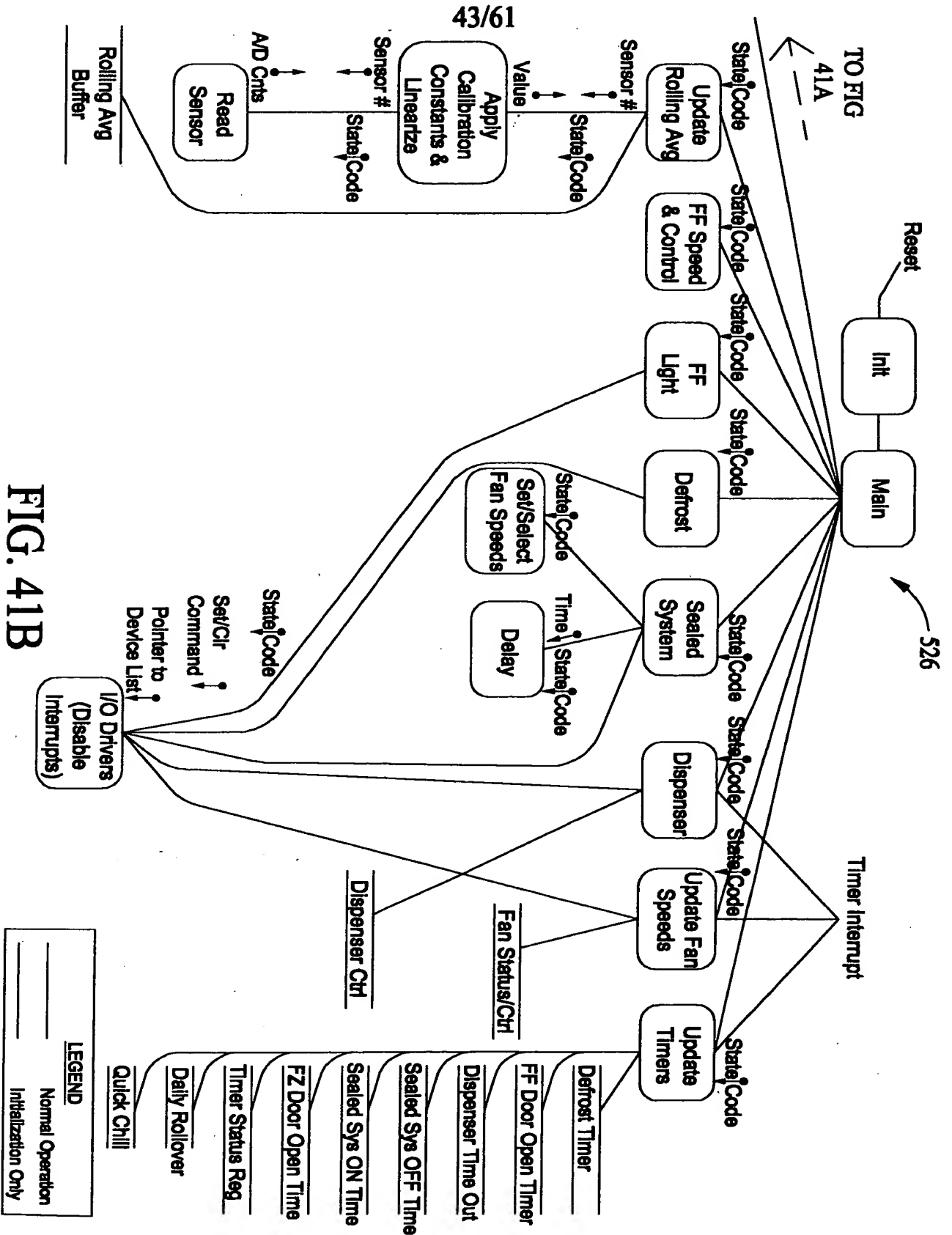


FIG. 41B



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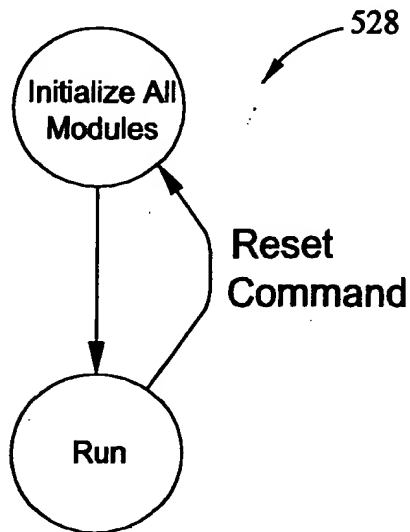


FIG. 42

HMI MAIN STATE MACHINE

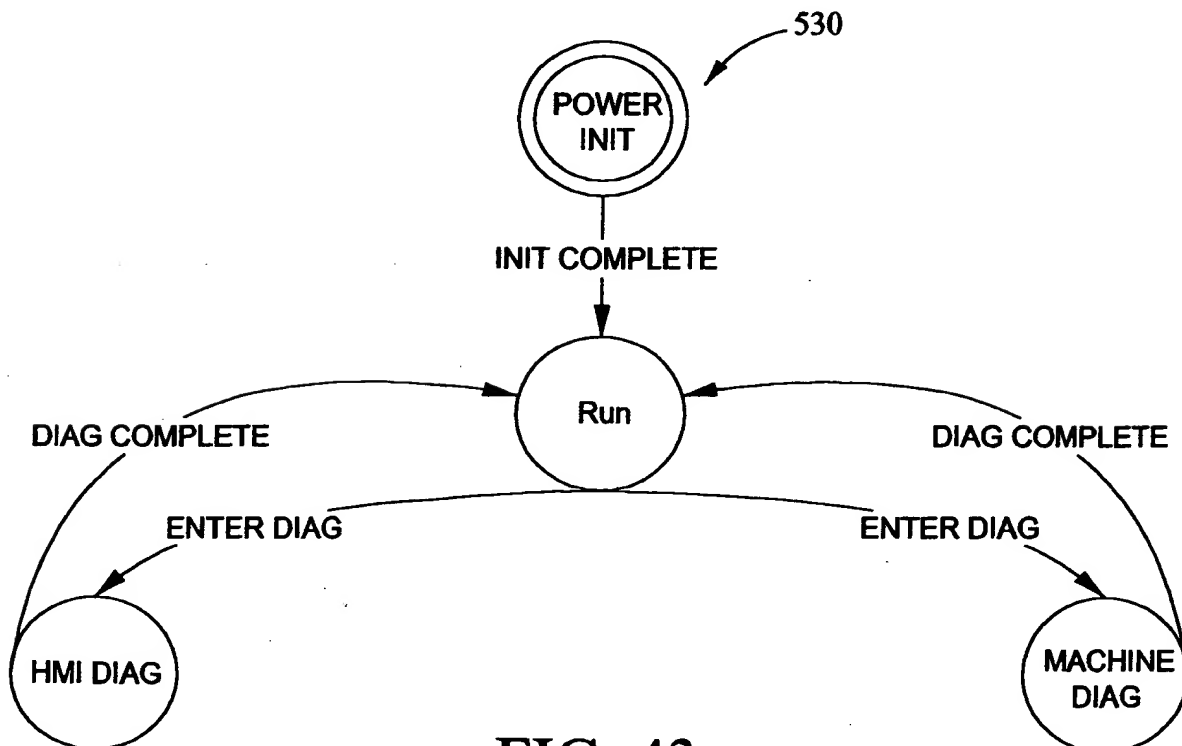
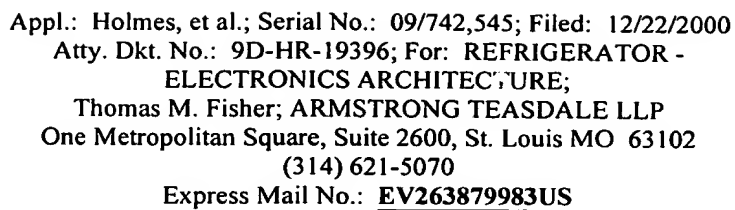


FIG. 43



The diagram illustrates the HMI Structure, centered around a **Main** module. The **Main** module is connected to several key components:

- Init** (Initialization) and **Reset** (Reset) inputs.
- Comm Interrupt** (Communication Interrupt) and **Timer Interrupt** (Timer Interrupt) inputs.
- Command Processor**: Receives **Command** signals and outputs **State/Code**.
- Dispense**: Receives **Command** signals and outputs **State/Code**.
- Diagnostic**: Receives **Command** signals and outputs **State/Code**.
- HMI Diagnostic**: Receives **Command** signals and outputs **State/Code**.
- Setpoint Adjust**: Receives **Command** signals and outputs **State/Code**.
- Timers and Status Indicators**:
 - DayCount** (Day Count)
 - Quick Chill Timer** (Quick Chill Timer)
 - OneMinute** (One Minute)
 - Turbo Timer** (Turbo Timer)
 - Daily Rollover** (Daily Rollover)
 - LED Pattern** (LED Pattern)
 - LED Control** (LED Control)
 - Keyboard Scan** (Keyboard Scan)
 - Key States & Key Value** (Key States & Key Value)
 - Char** (Character)
 - xPort Status** (xPort Status)
 - Rstatus** (Ready Status)
 - CLR OK** (Clear OK)
- Protocol Data Parse** and **Protocol Data Xmit** (Protocol Data Transmit) modules, which interface with external data streams.

The diagram shows a complex network of connections between the **Main** module and these various components, indicating a highly integrated system architecture.



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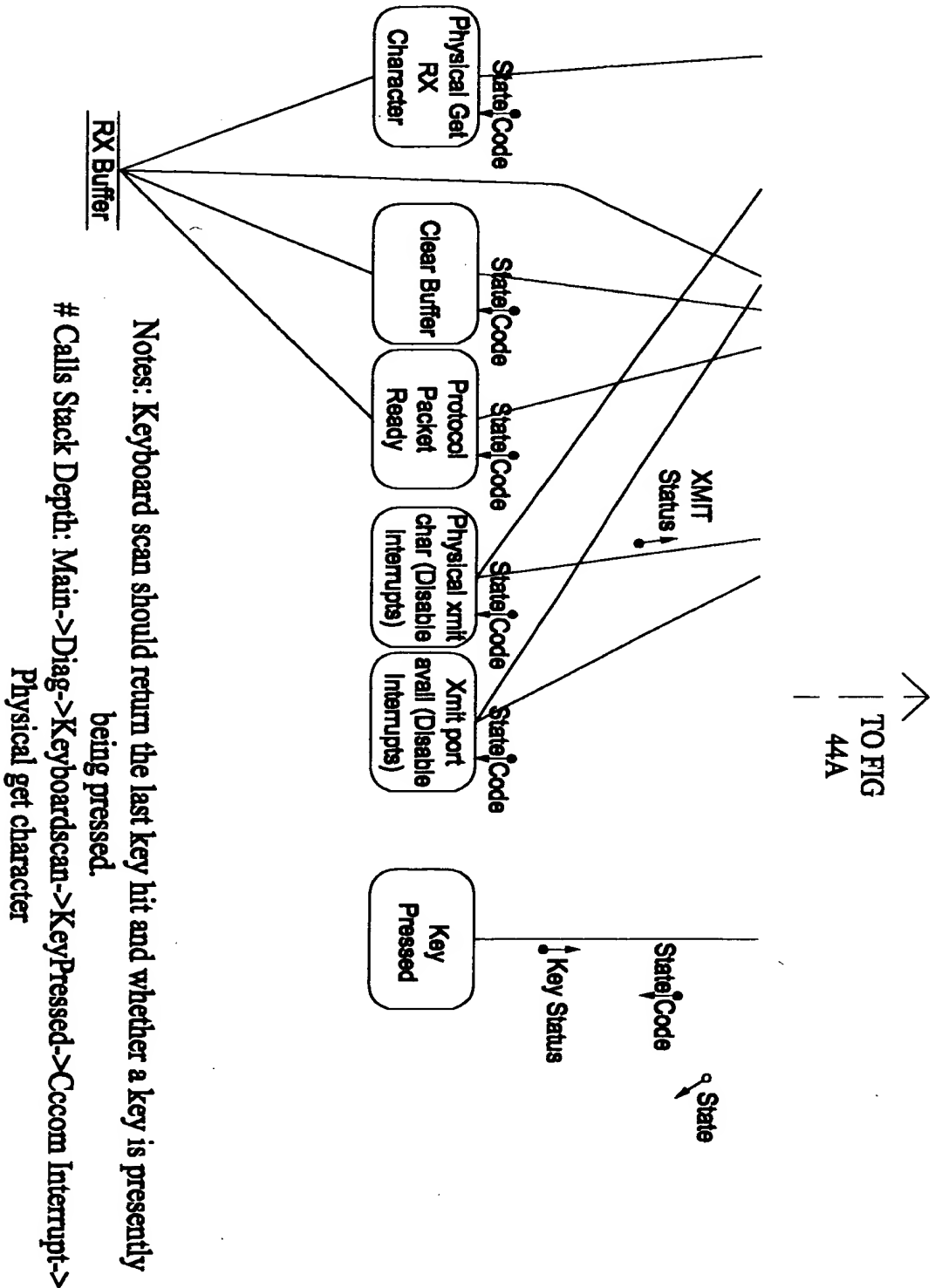


FIG. 44B



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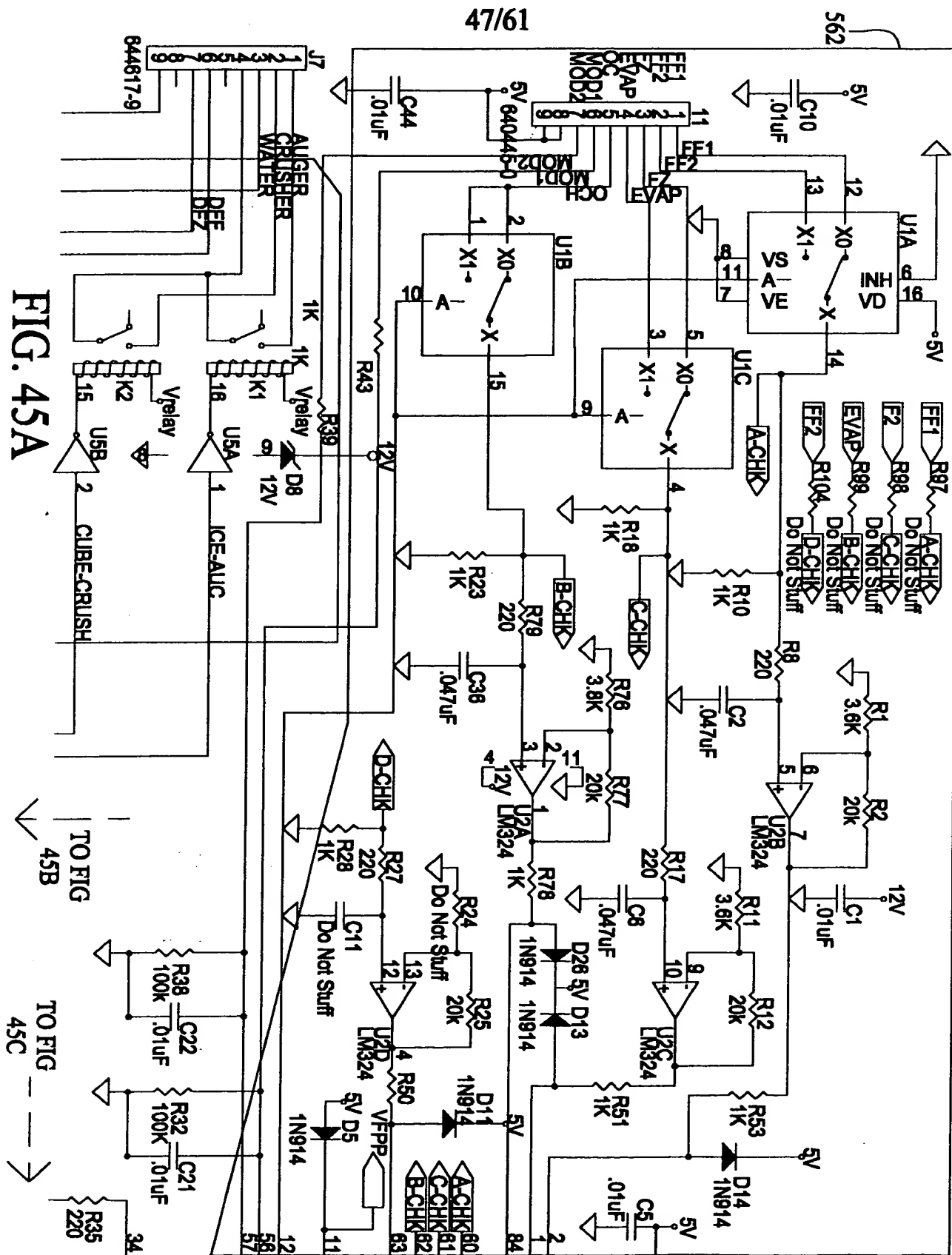
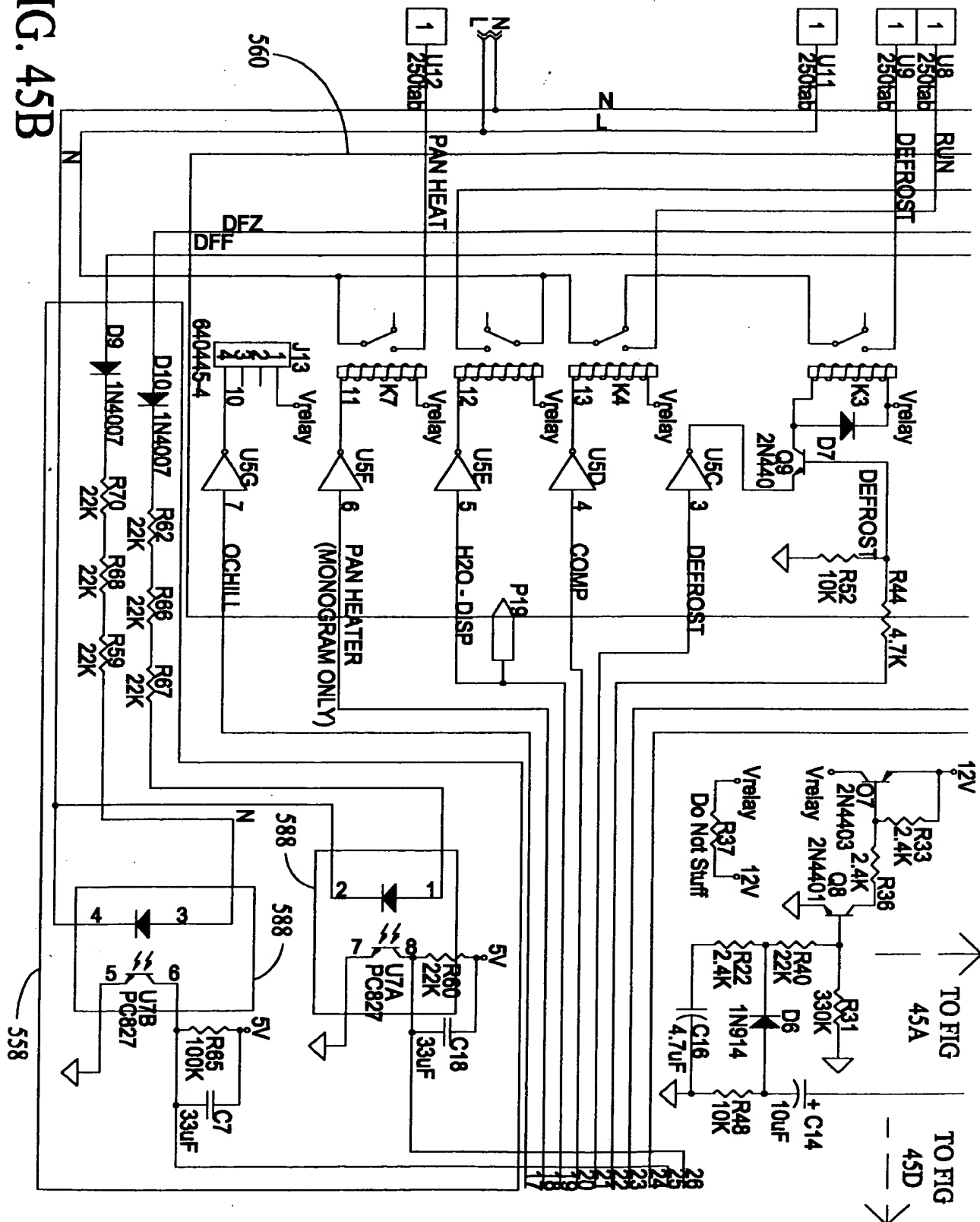
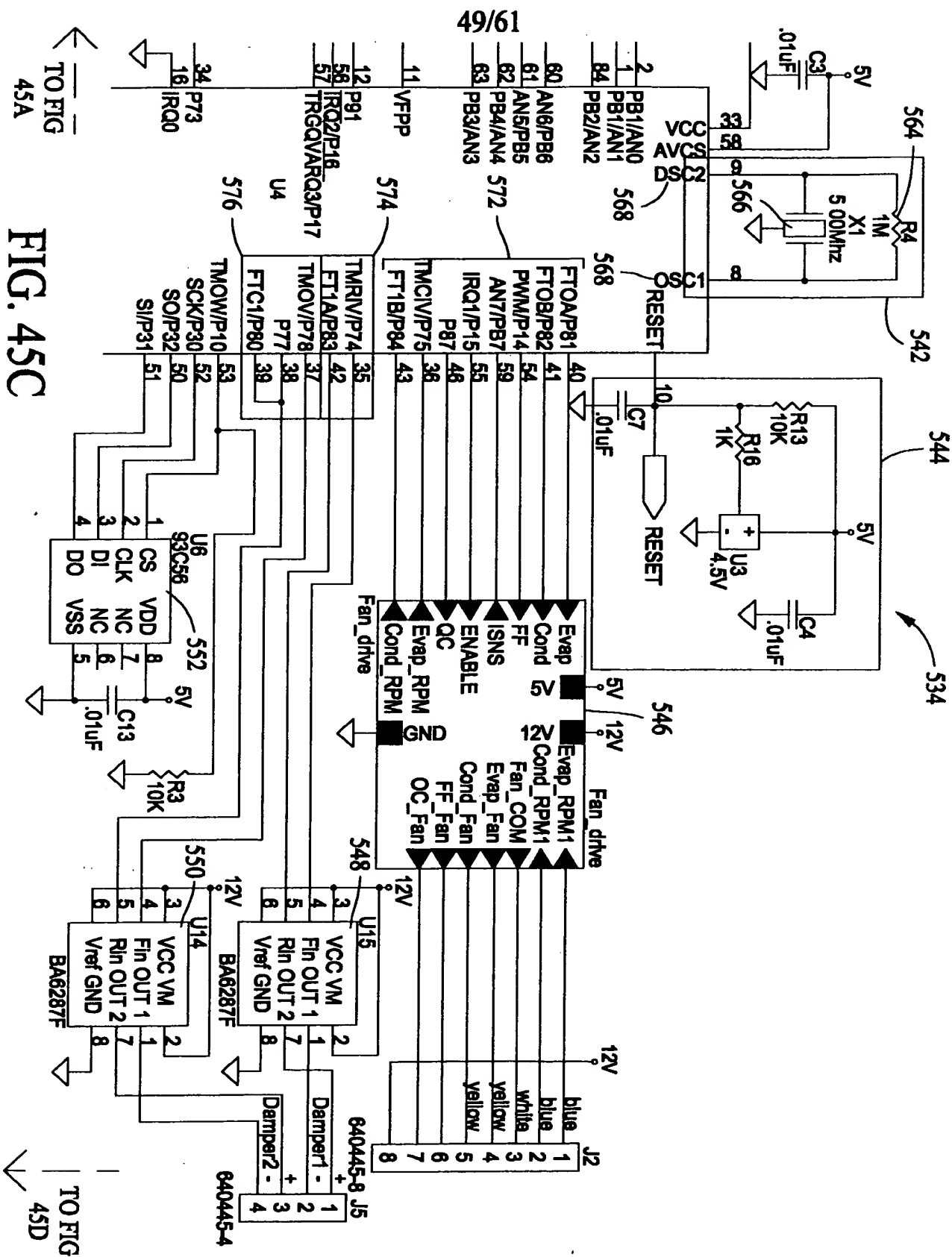


FIG. 45B



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Appl.: Holmes, et al.; Serial No.: 09/742,545; Filed: 12/22/2000
Atty. Dkt. No.: 9D-HR-19396; For: REFRIGERATOR -
ELECTRONICS ARCHITECTURE;
Thomas M. Fisher; ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600, St. Louis MO 63102
(314) 621-5070
Express Mail No.: EV263879983US

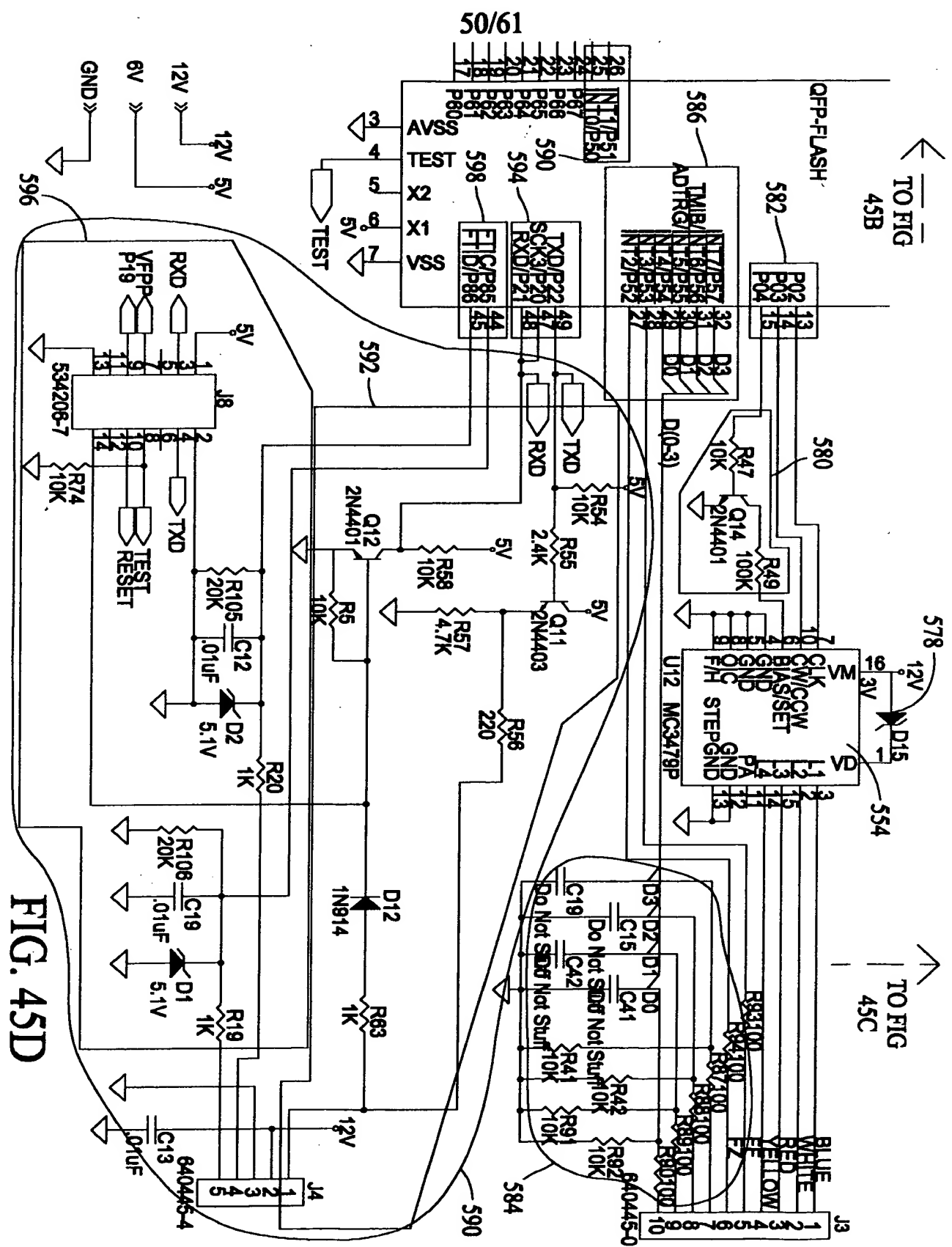
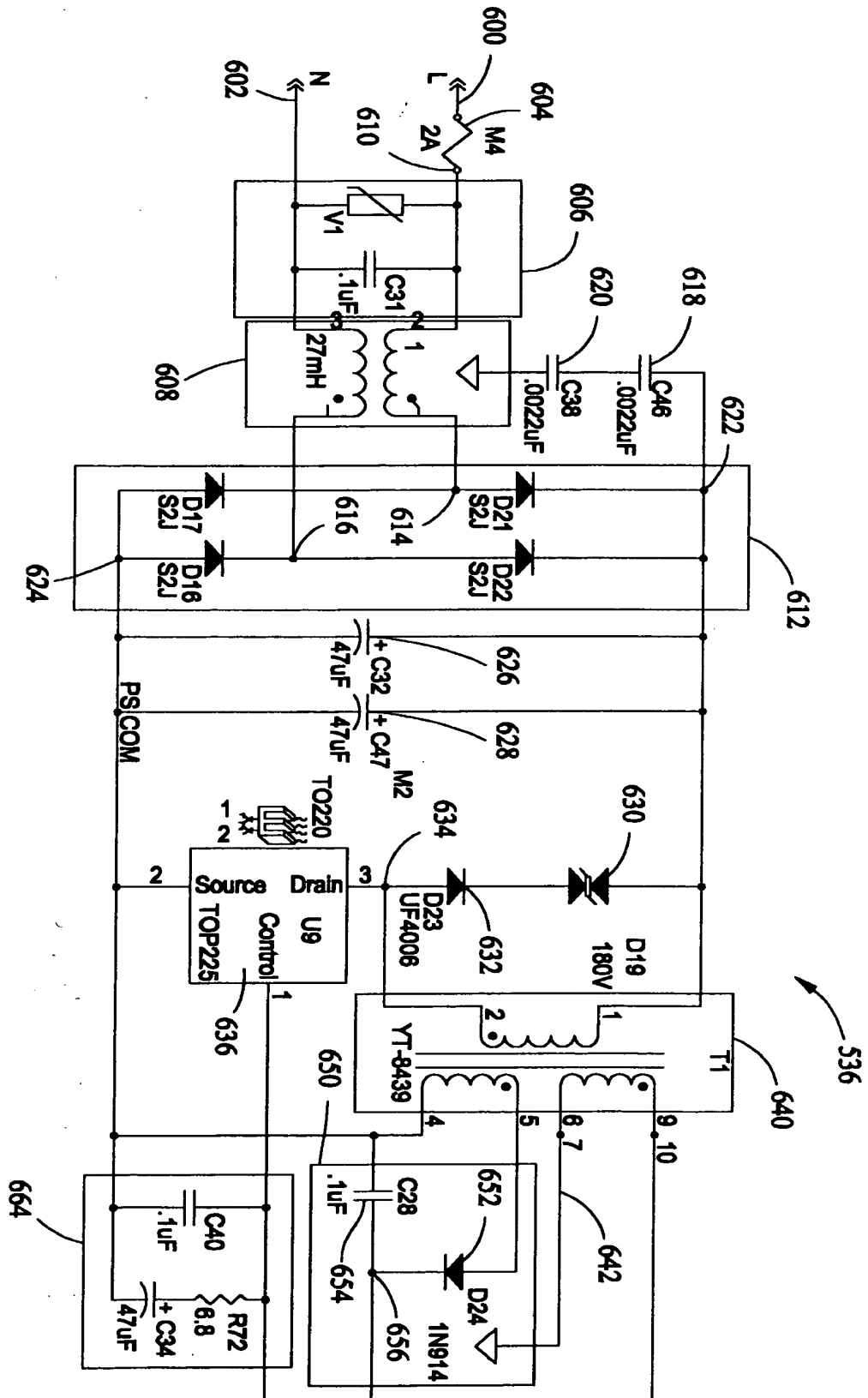


FIG. 45D



Appl.: Holmes, et al.; Serial No.: 09/742,545; Filed: 12/22/2000
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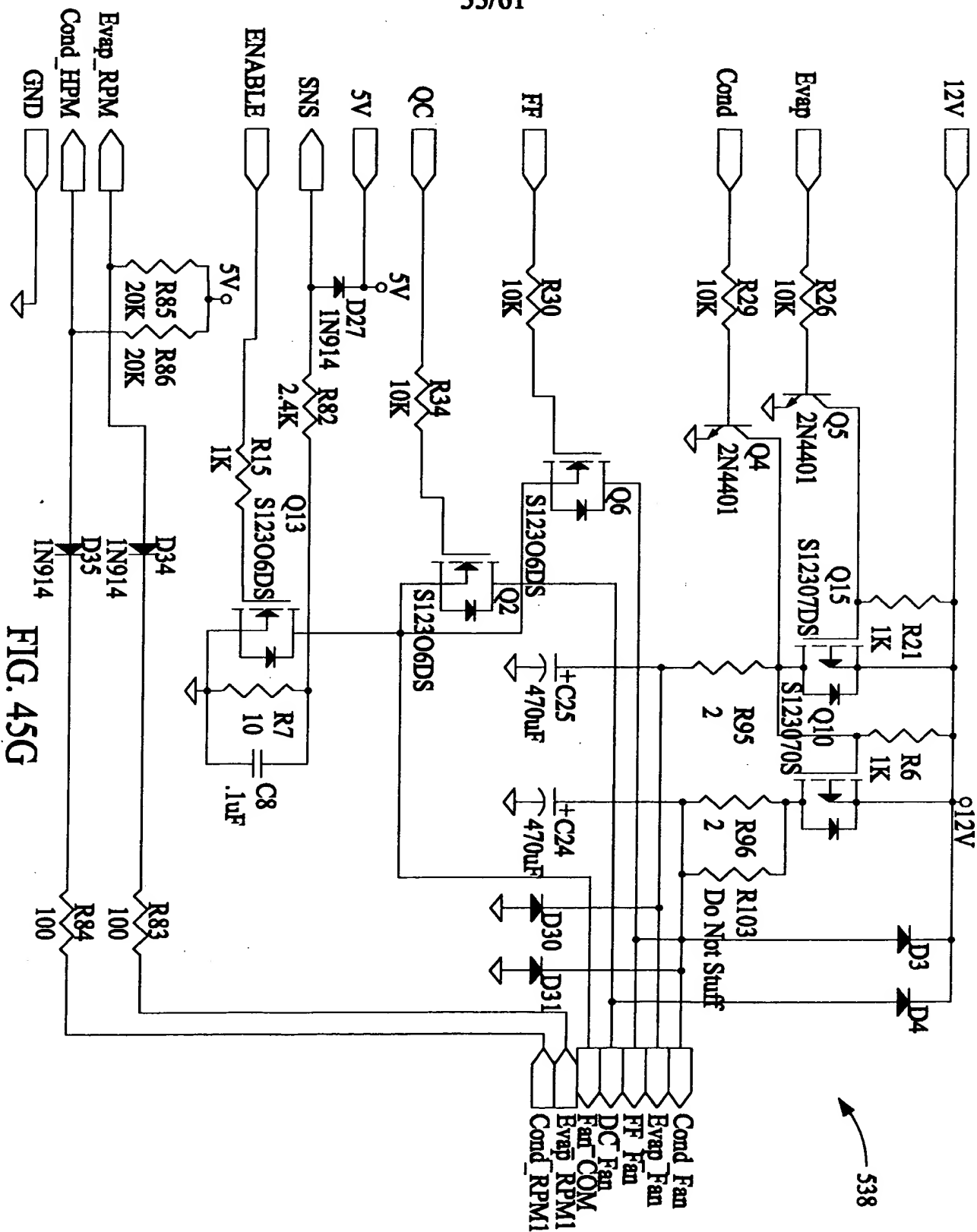


FIG. 45G

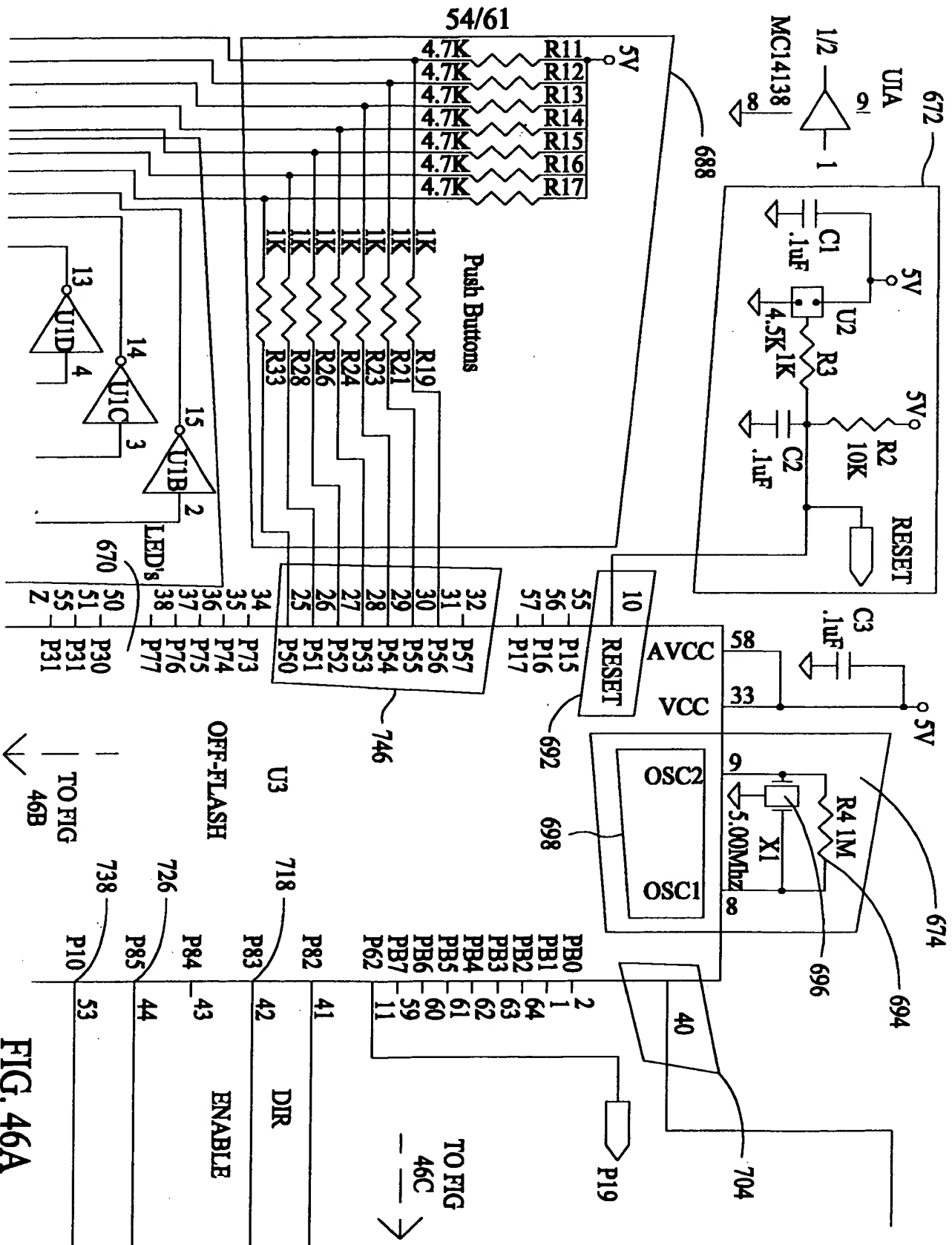
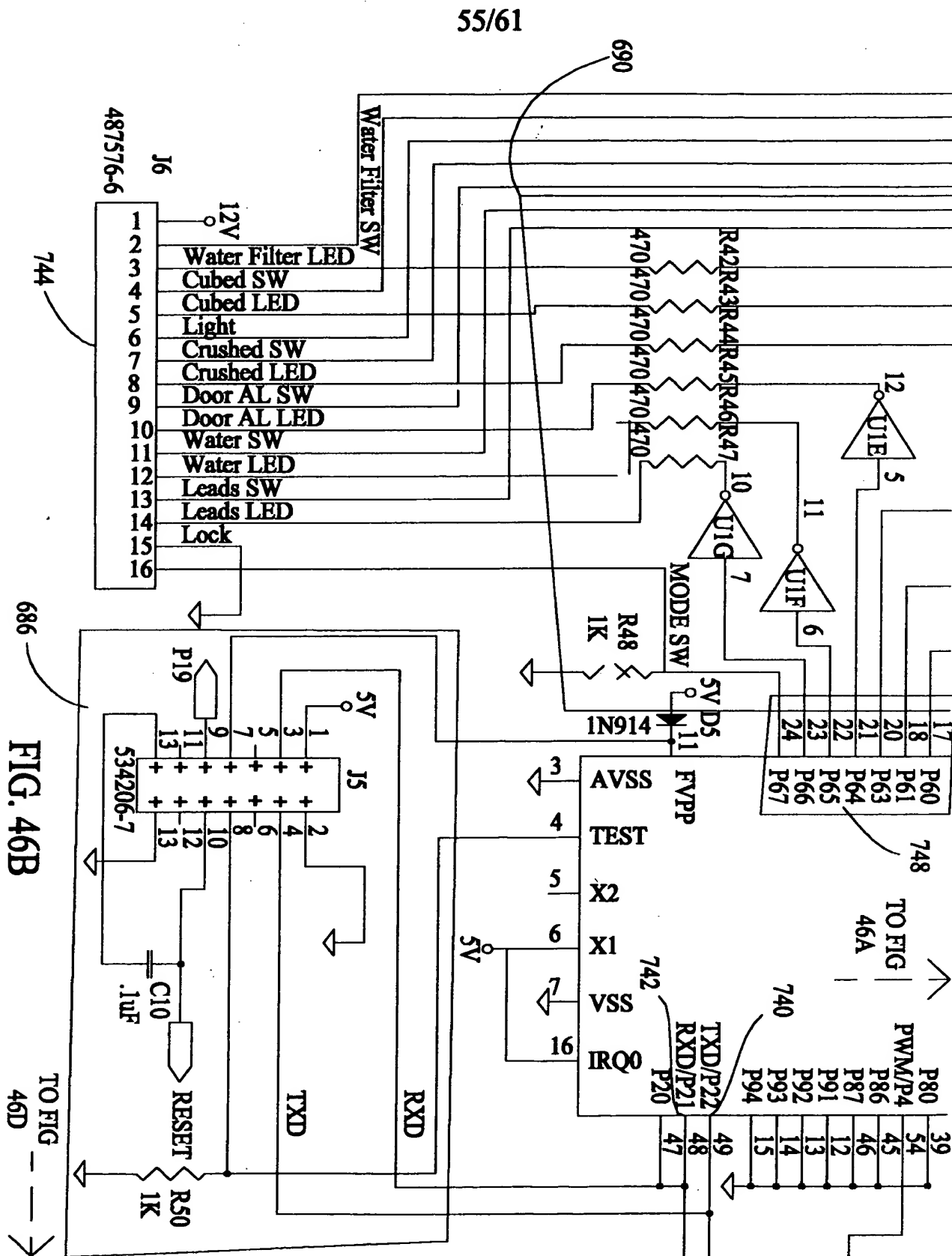
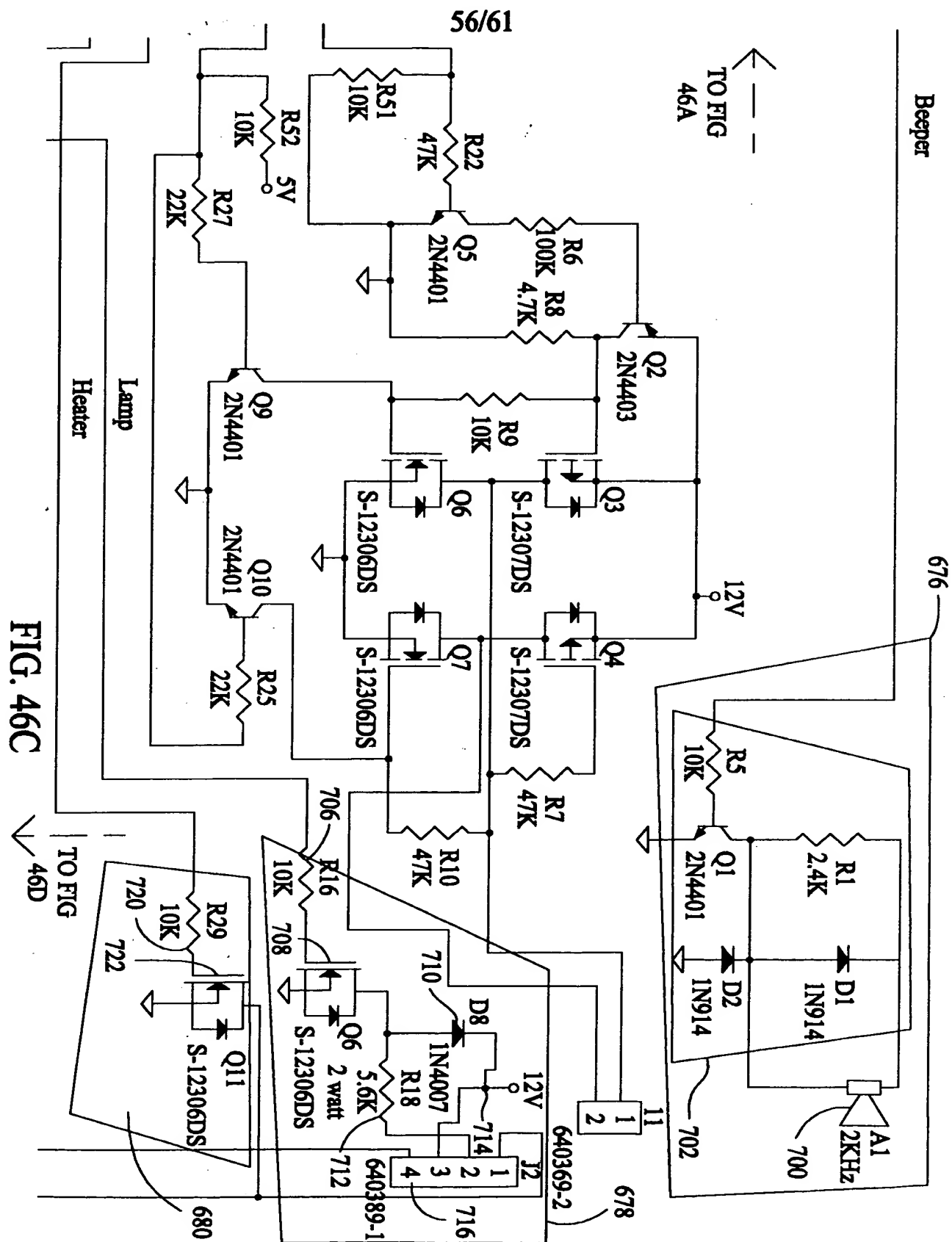
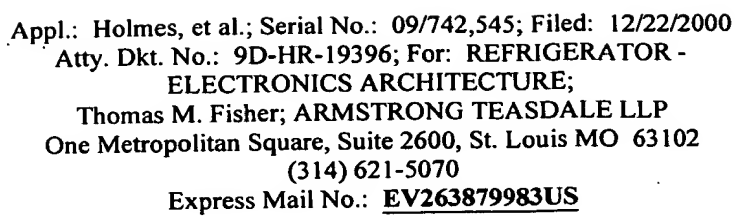


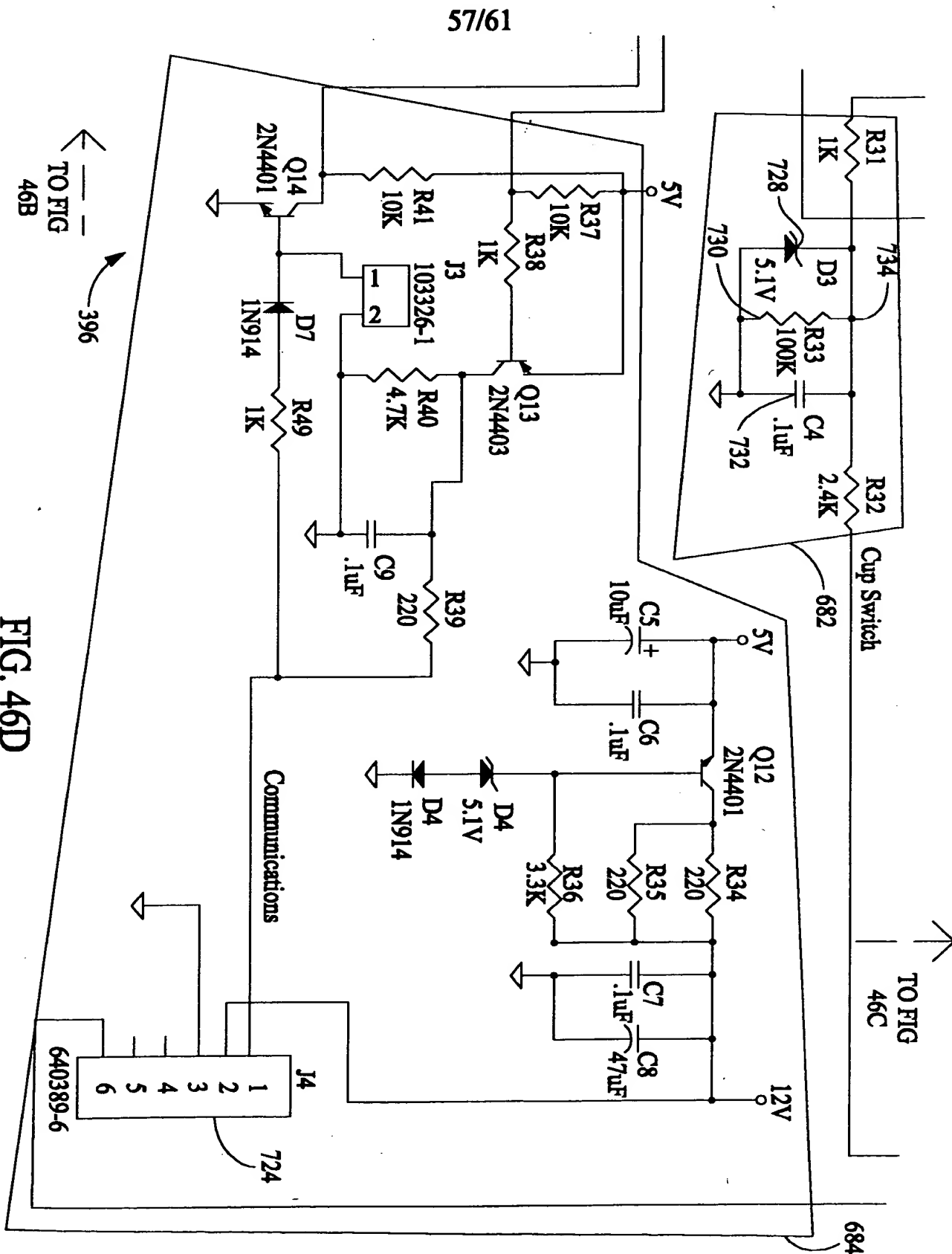
FIG. 46A



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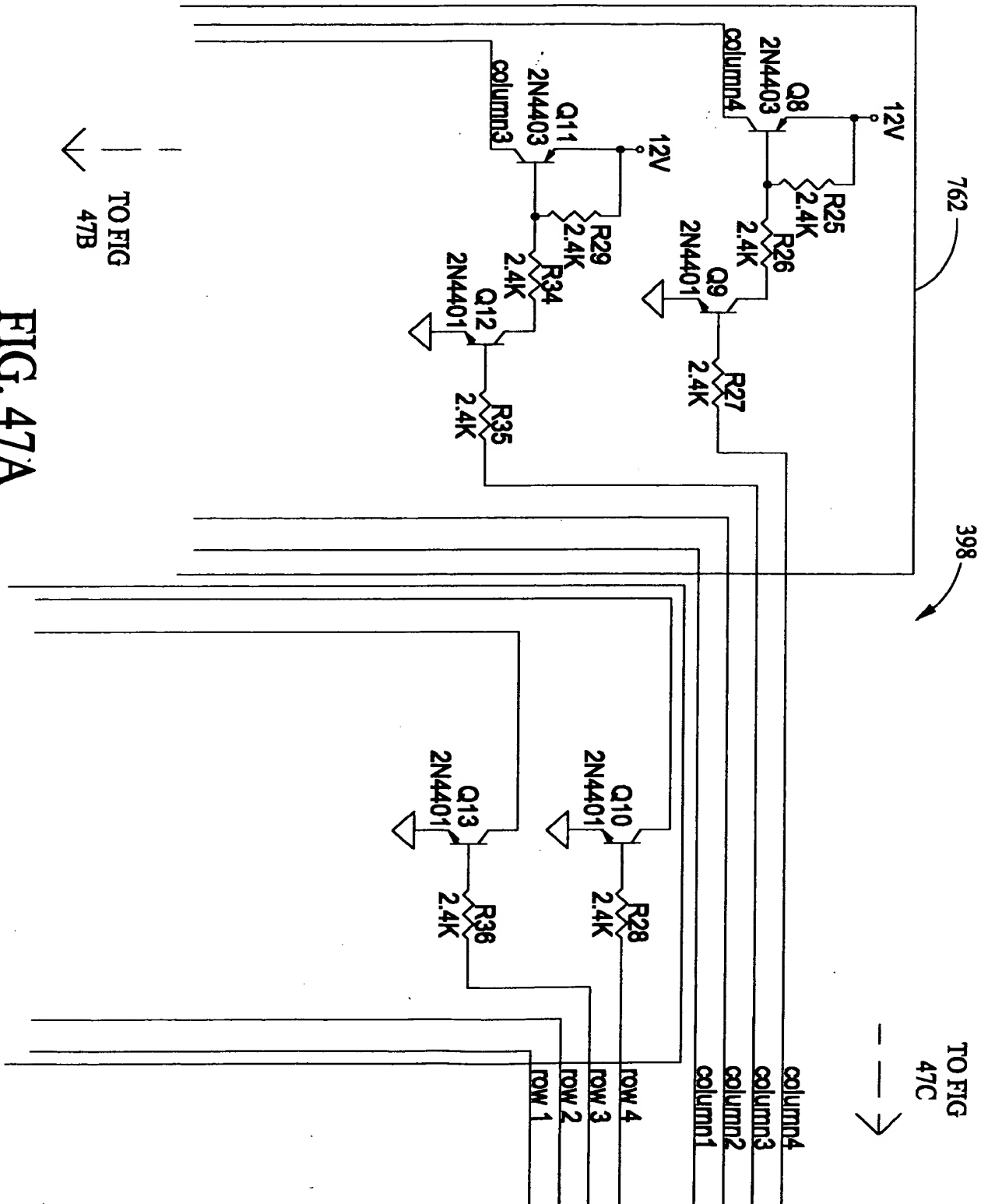


FIG. 47A



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Express Mail No.: EV263879983US

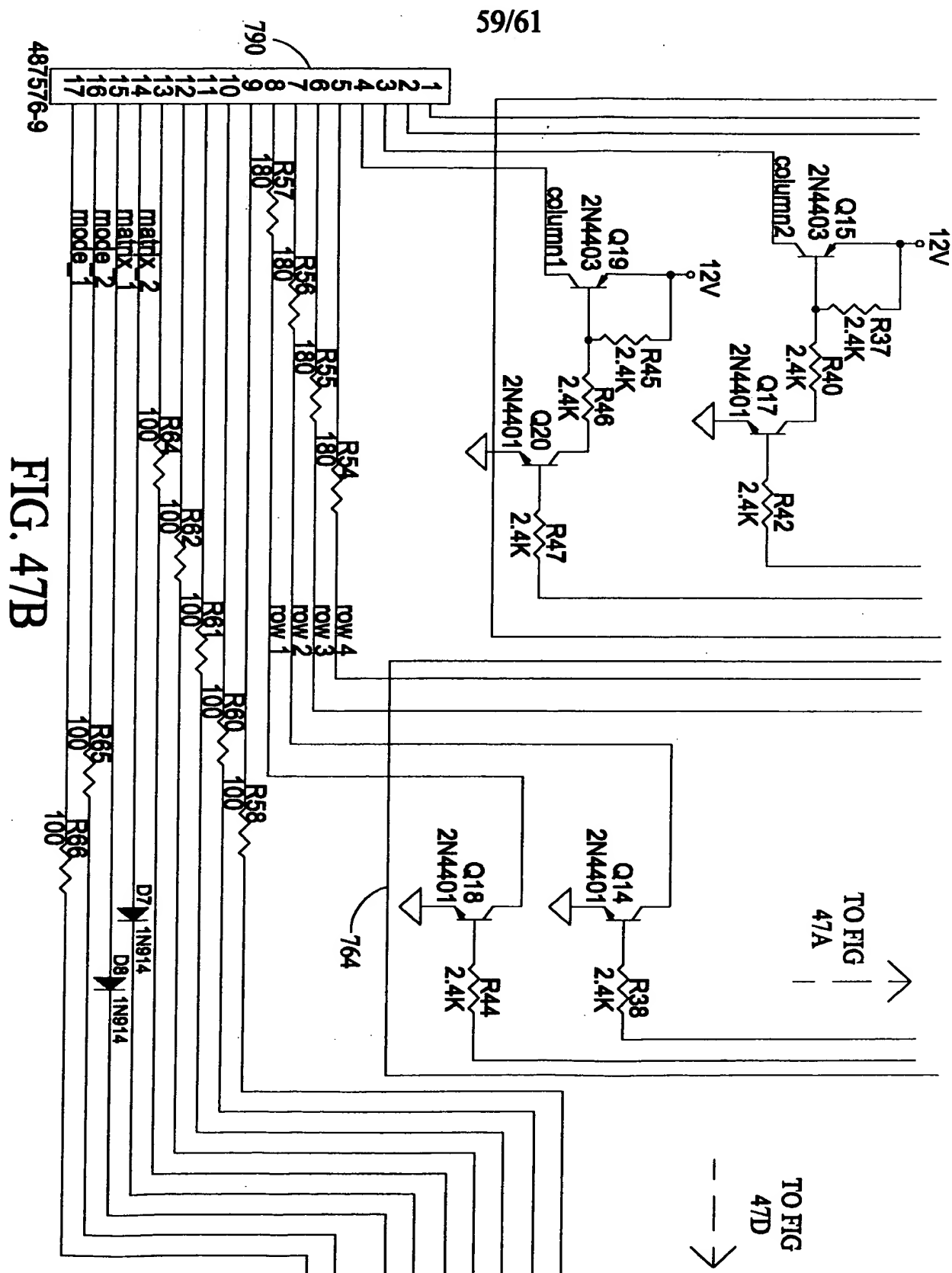


FIG. 47B



Appl.: Holmes, et al.; Serial No.: 09/742,545; Filed: 12/22/2000
Atty. Dkt. No.: 9D-HR-19396; For: REFRIGERATOR -
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(314) 621-5070
Express Mail No.: EV263879983US

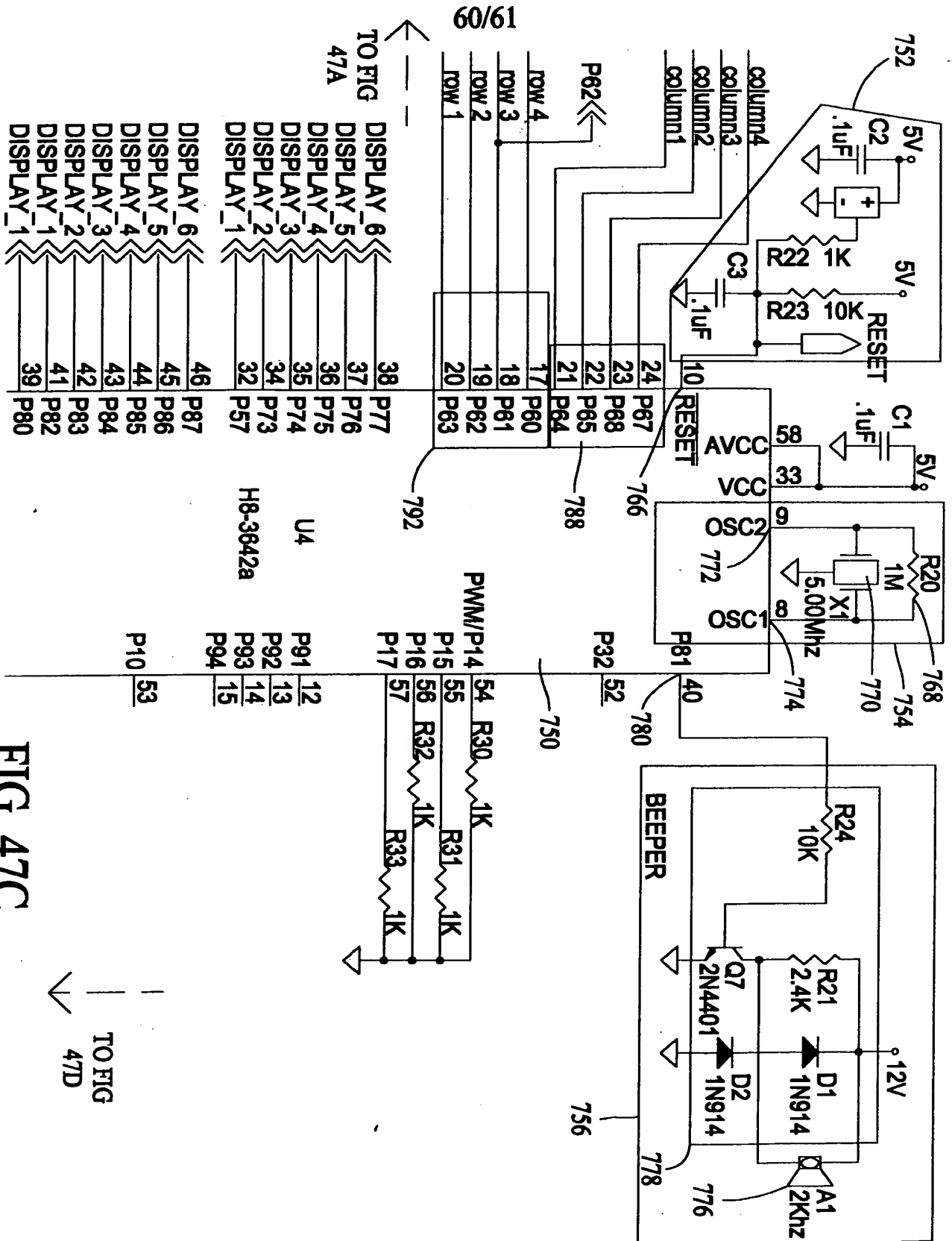


FIG. 47C

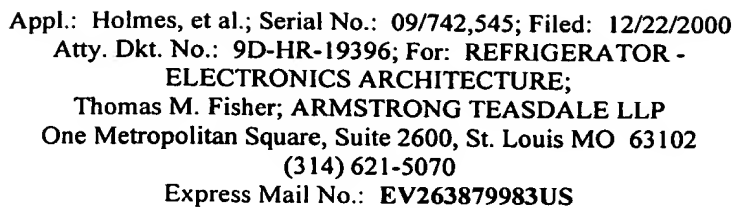


FIG. 47D

FIG. 47D

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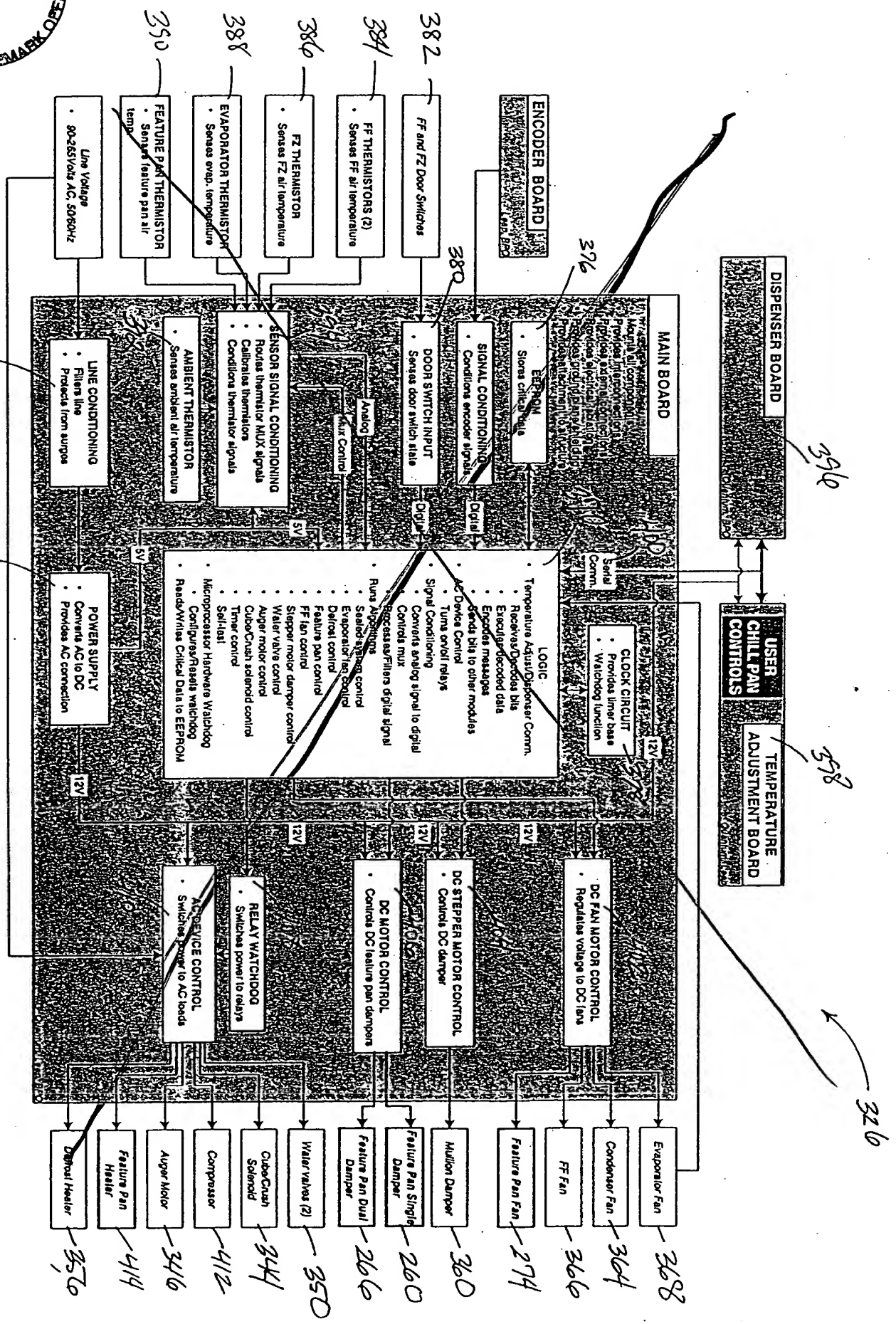


FIG. 9

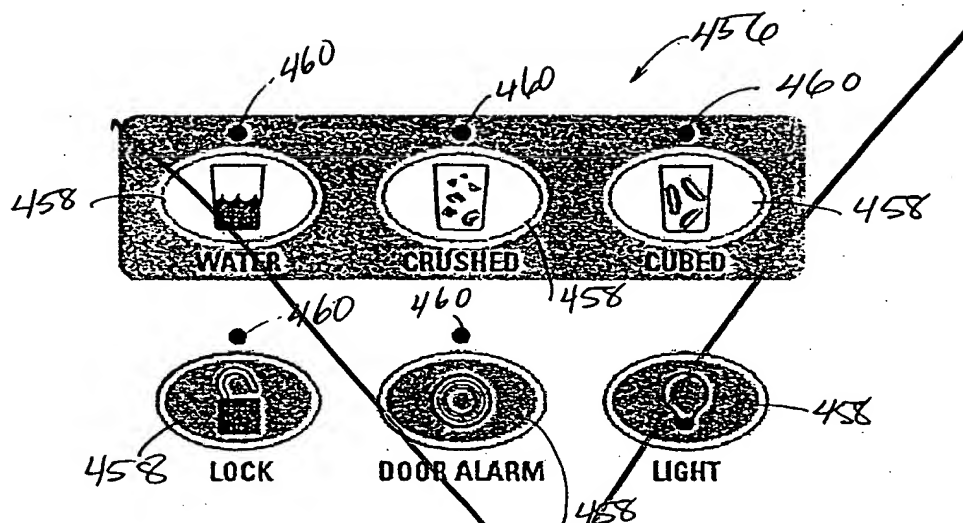


FIG. 15

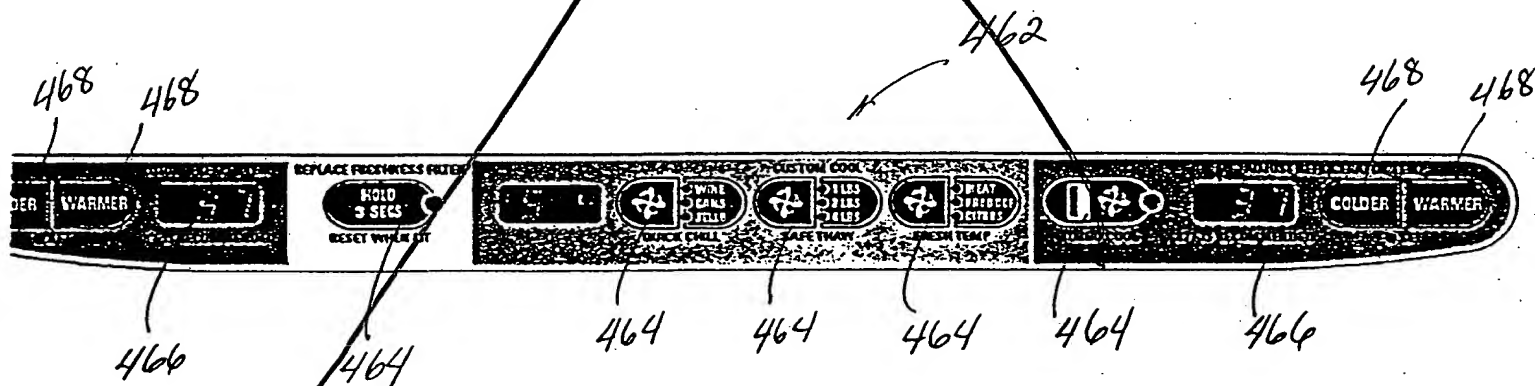


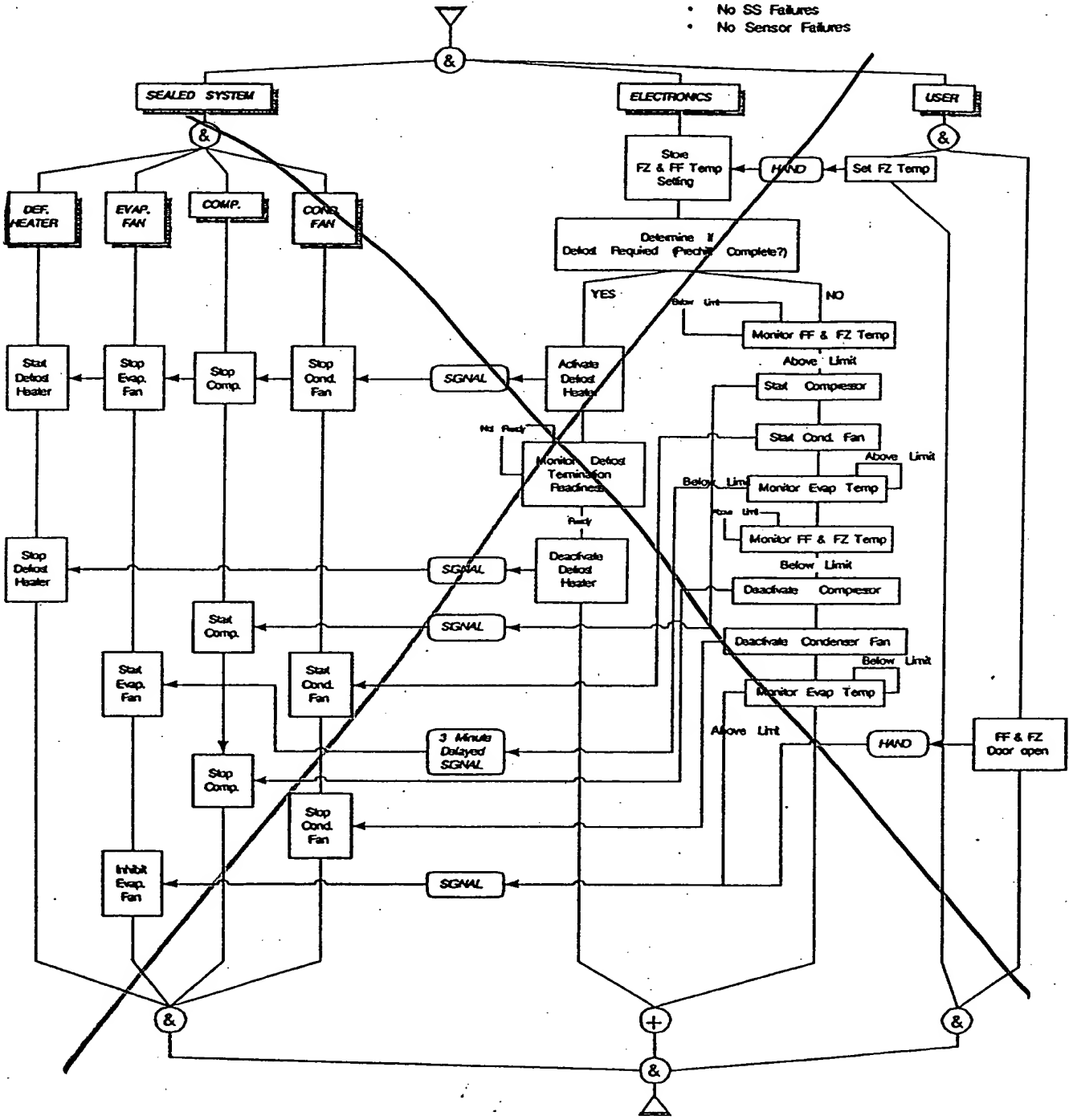
FIG. 16

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Sealed System Assumptions:

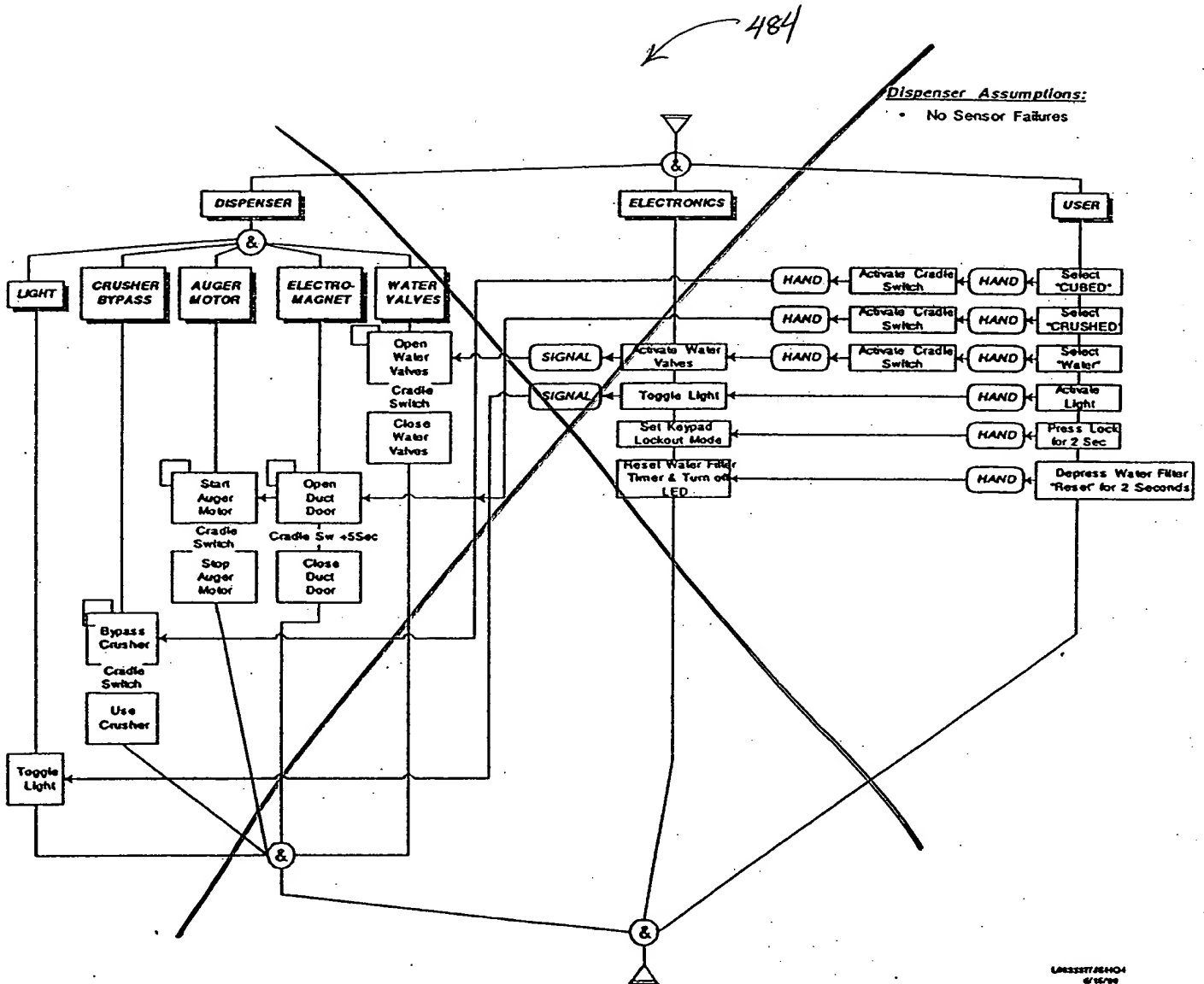
- No SS Failures
- No Sensor Failures



Sealed System Behavior Diagram

Fig 18

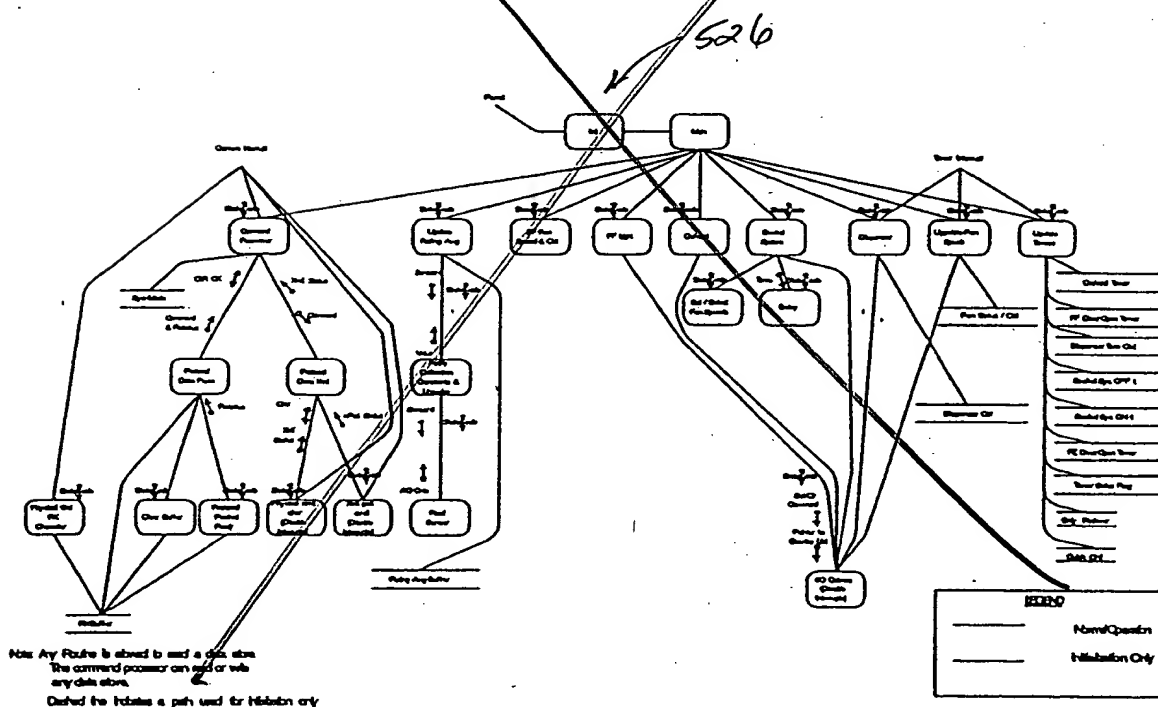
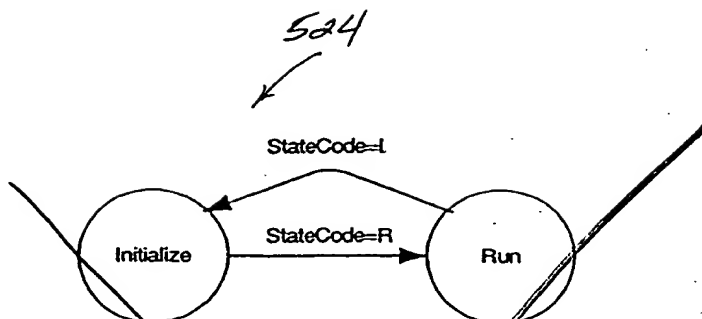
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6/16/99

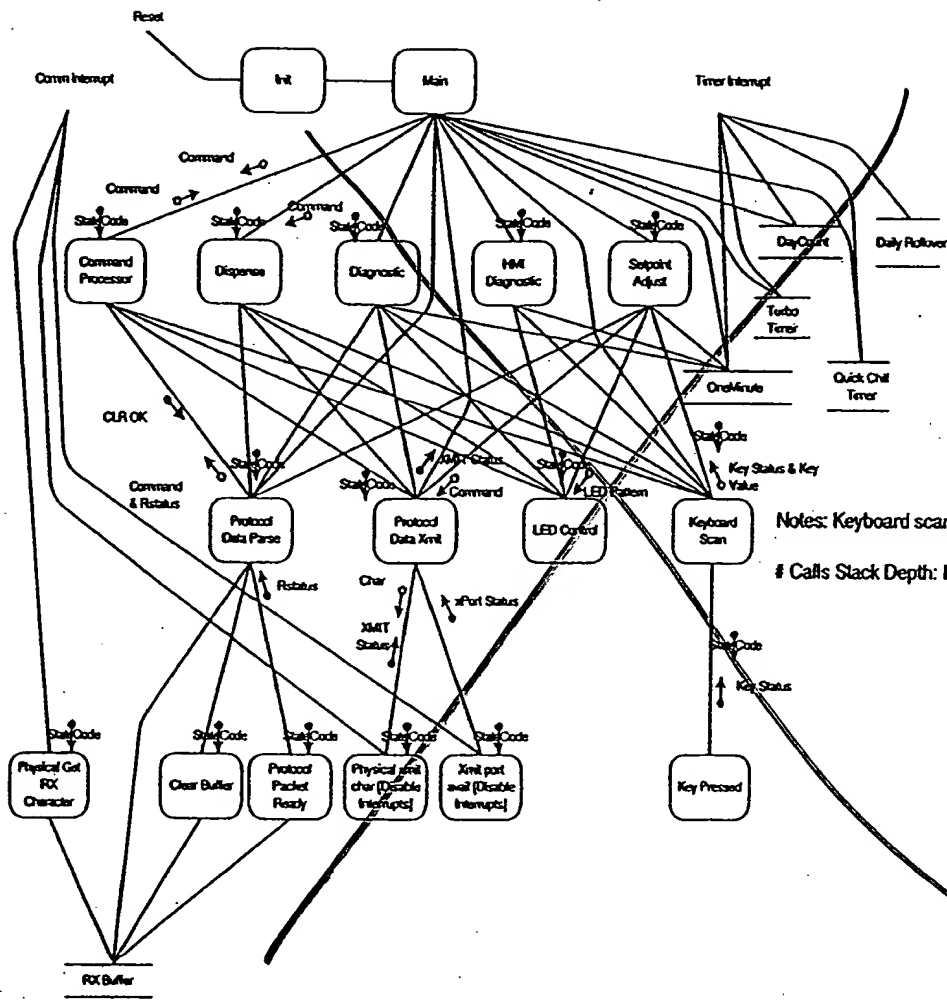
Dispenser Behavior

Fig 20



HMI Structure

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Notes: Keyboard scan should return the last key hit and whether a key is presently being pressed.
 # Calls Stack Depth: Main->Diag->Keyboardscan-> KeyPressed->Com Interrupt-> Physical get character

Fig. 44

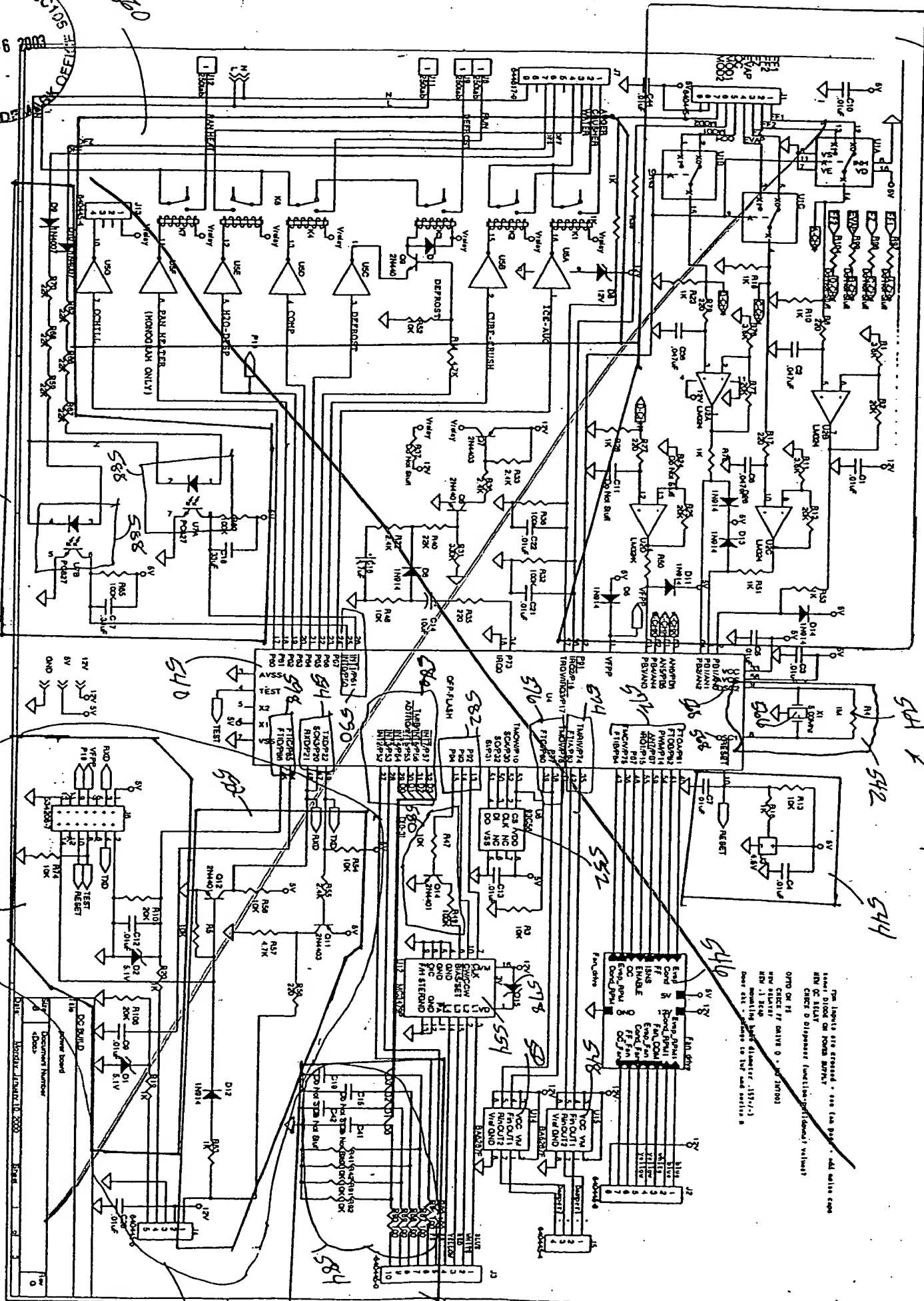


FIGURE 4/5

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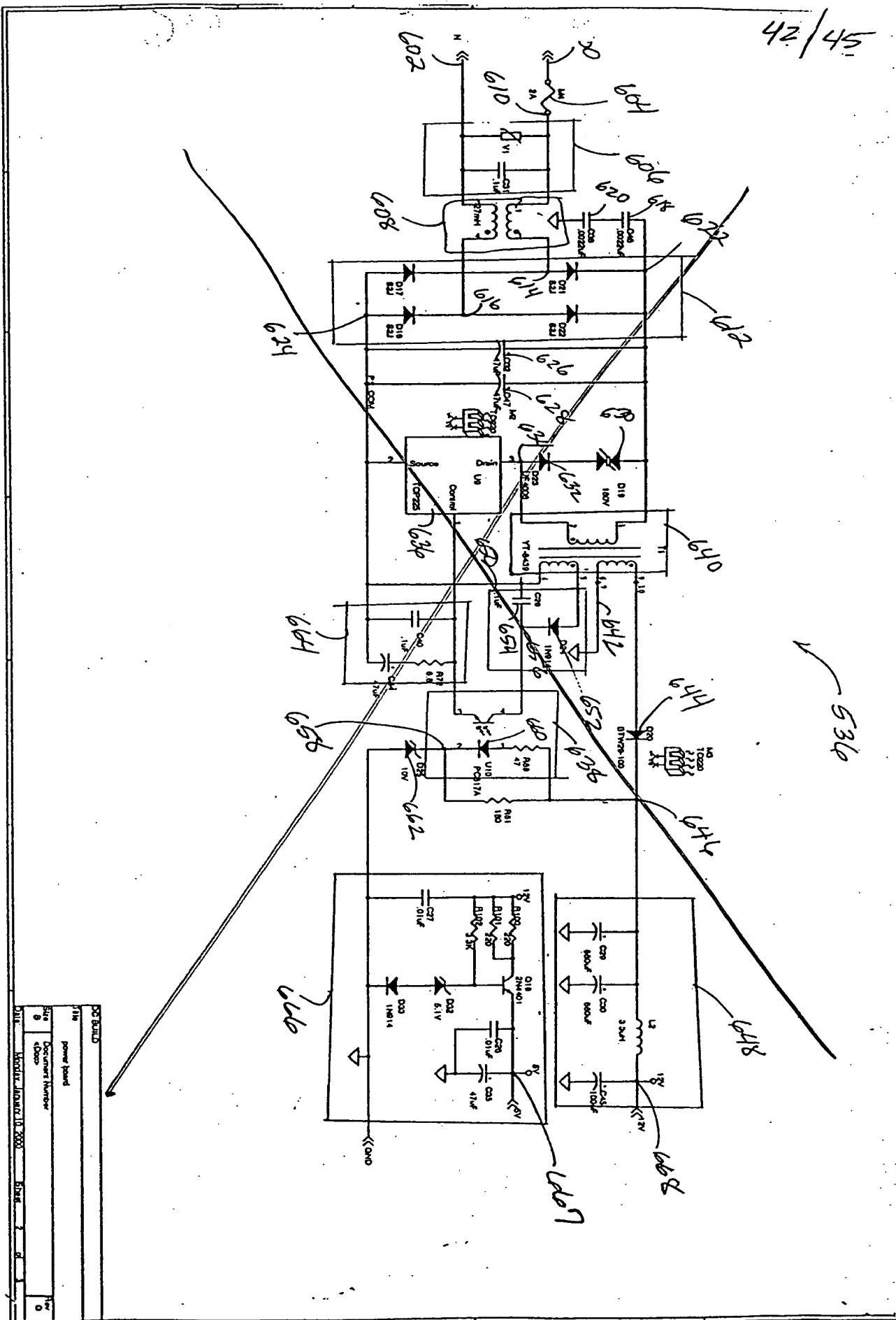
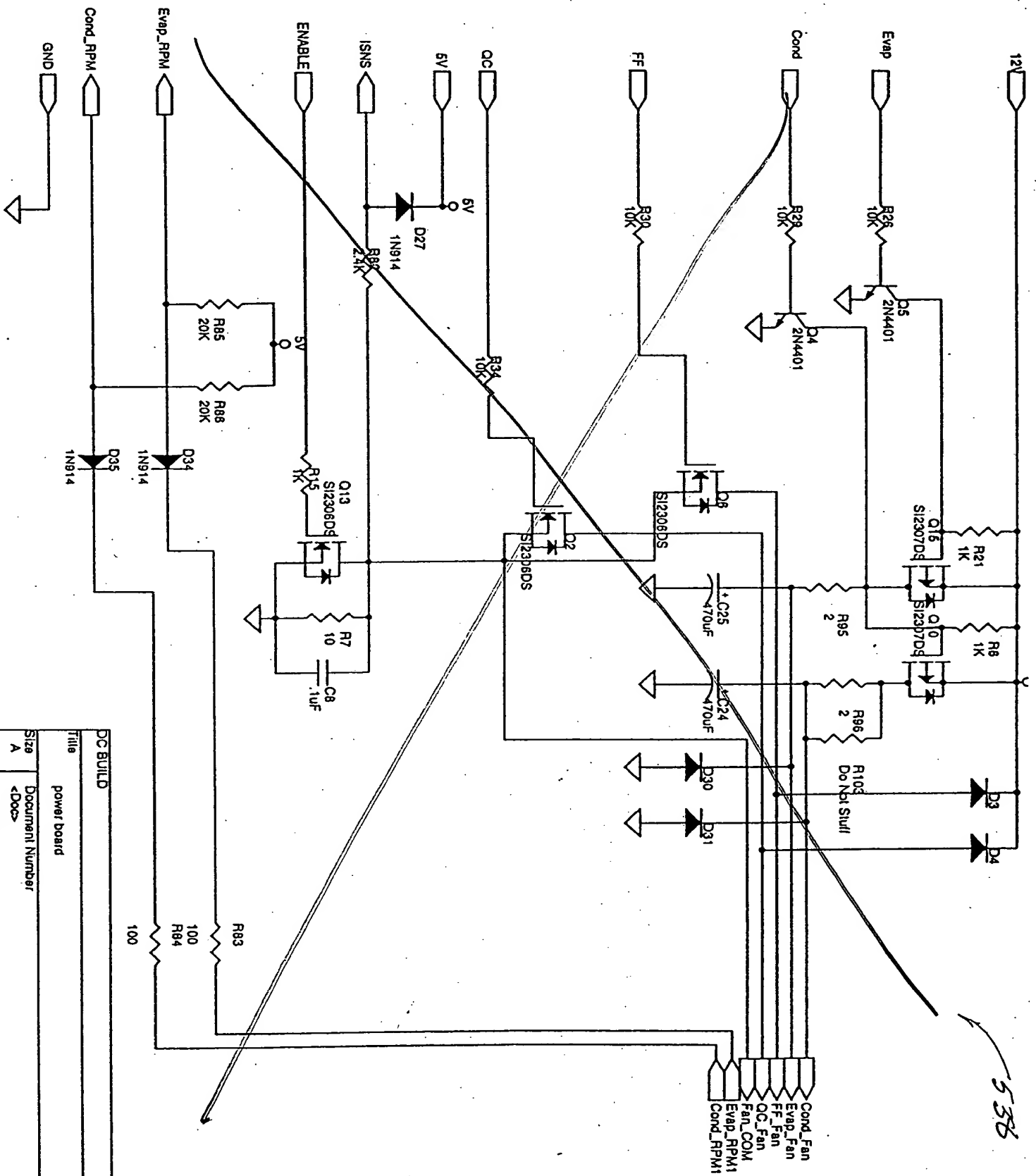


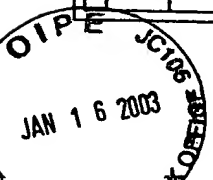
FIGURE 45

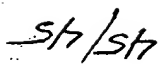


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DC BUILD		
Title	power board	
Size	Document Number	Rev
A	<Doc>	G
Date	Thursday, January 06, 2000	Sheet 3 of 3





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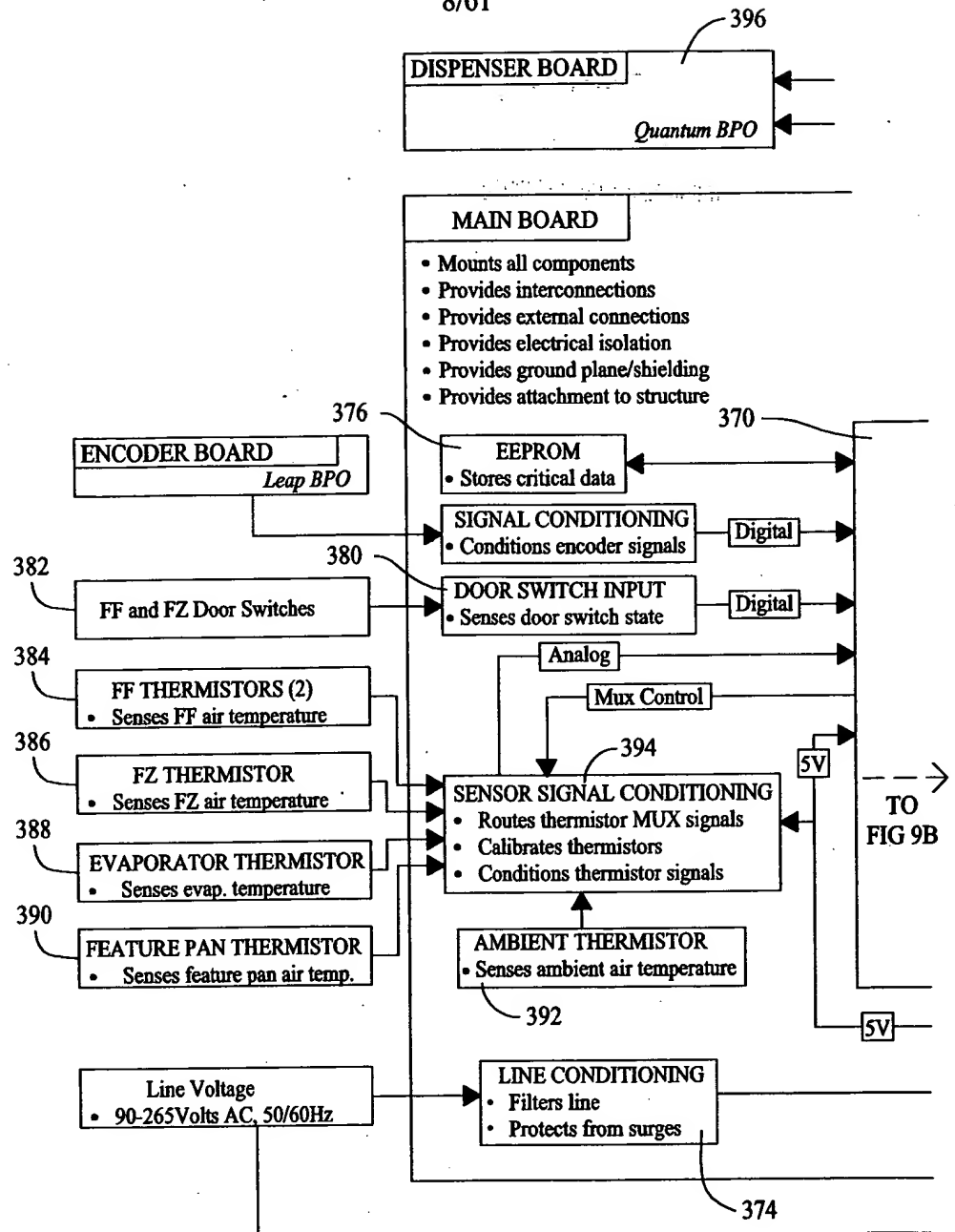
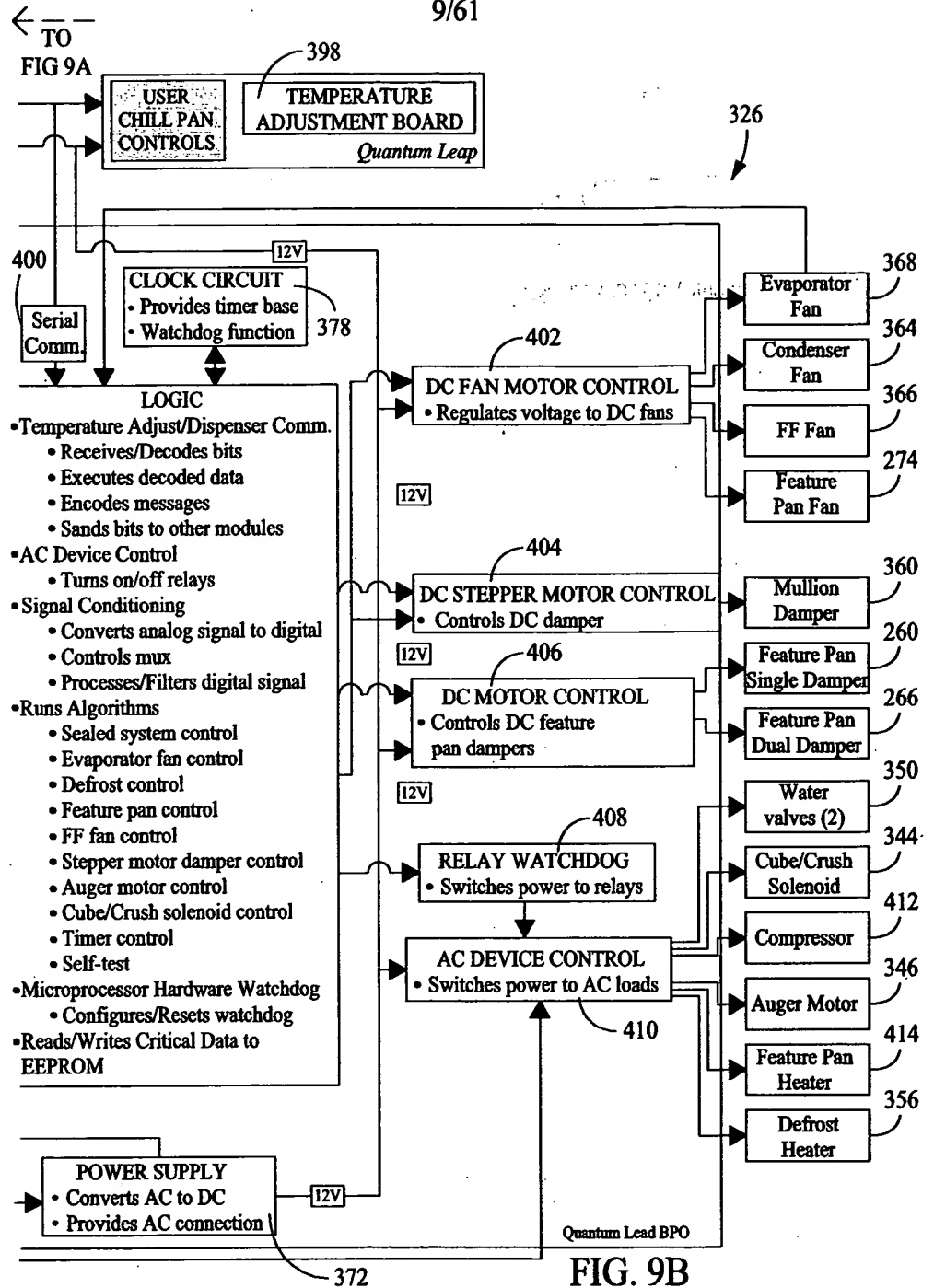
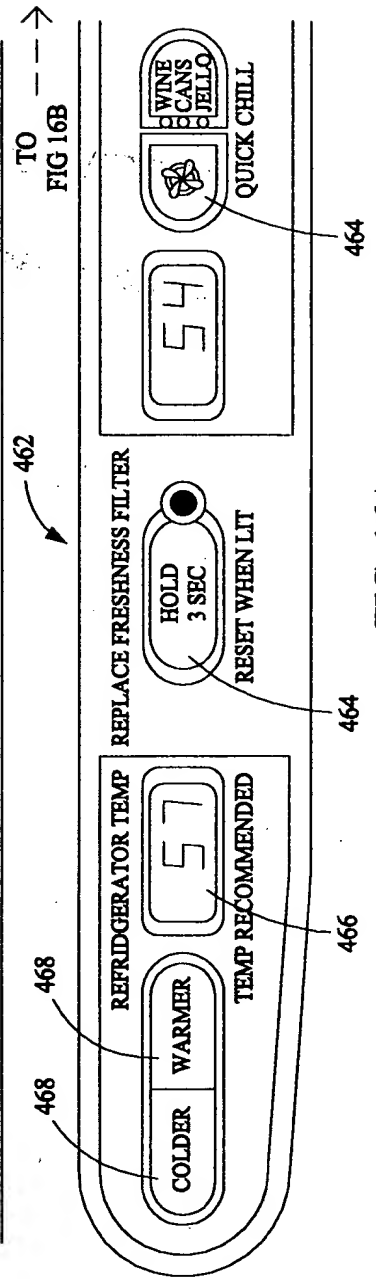
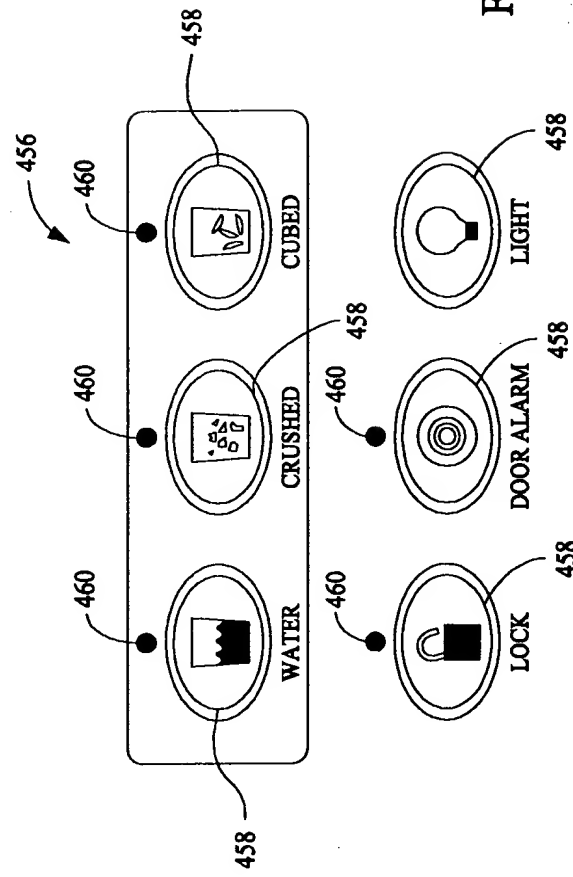


FIG. 9A

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TO
FIG 16B

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TO
FIG. 16A

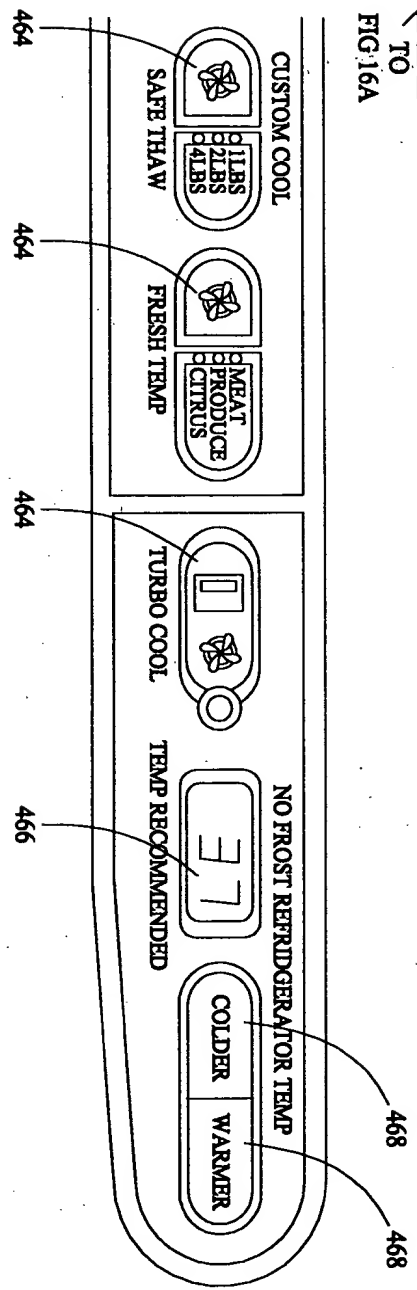


FIG. 16B

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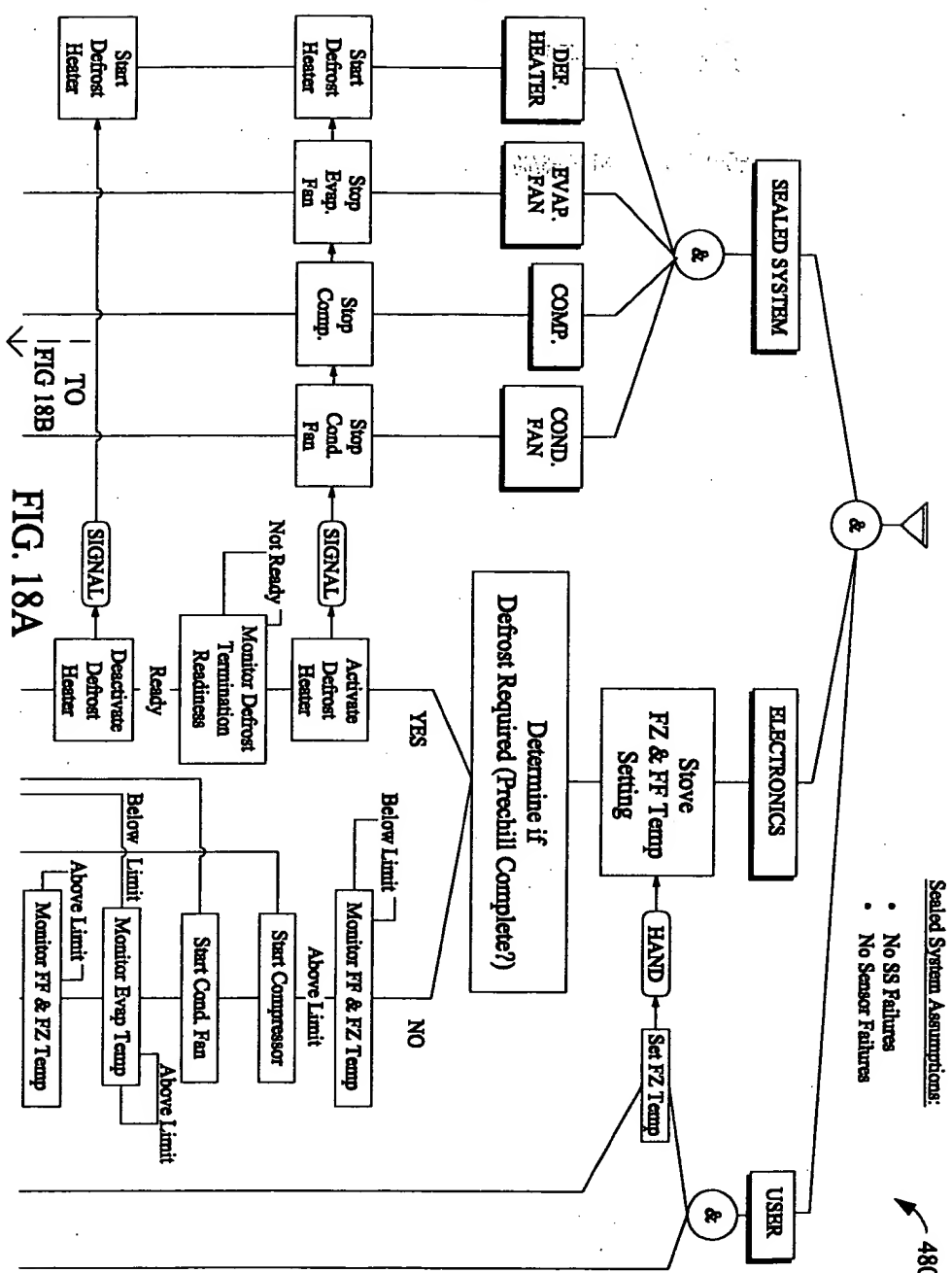


FIG. 18A

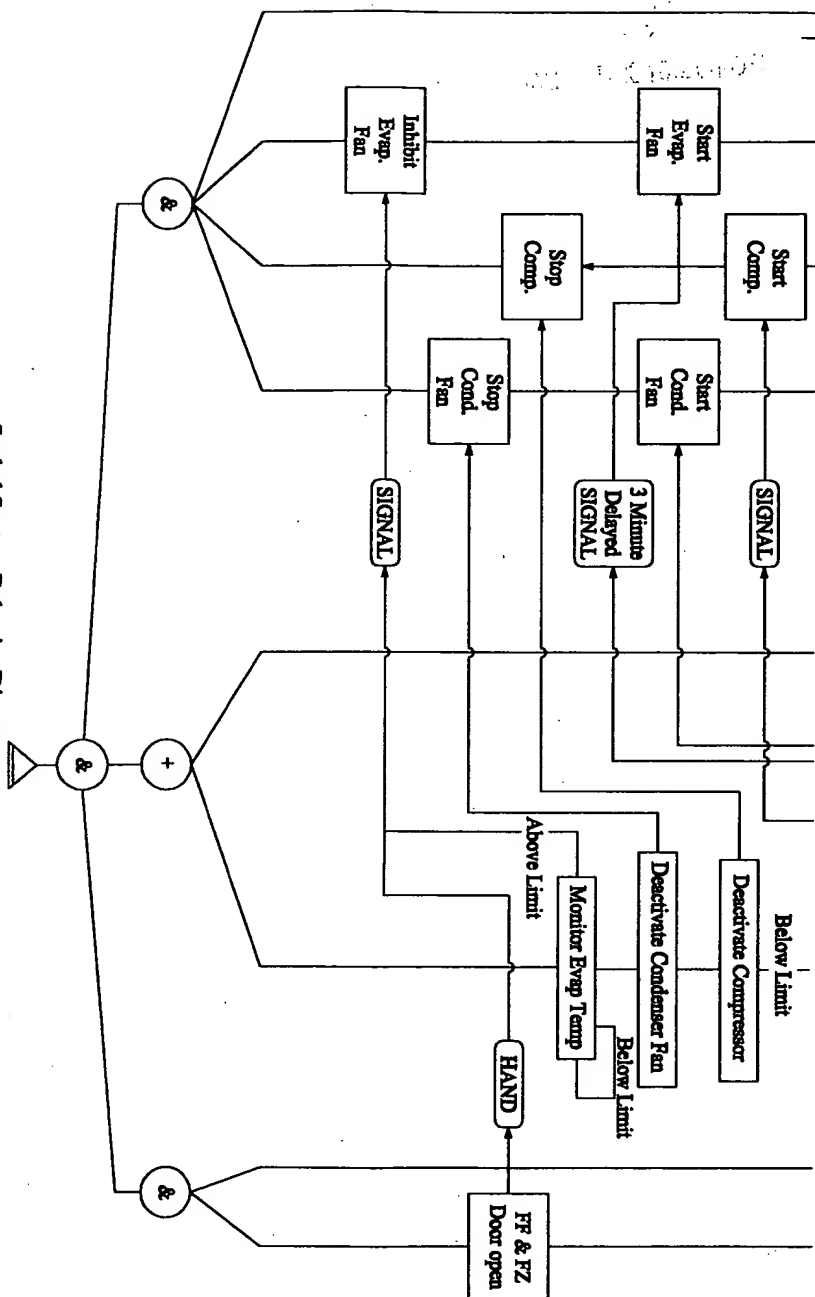
Sealed System Assumptions:
 • No SS Failures
 • No Sensor Failures

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TO
FIG 18A

Sealed System Behavior Diagram
FIG. 18B



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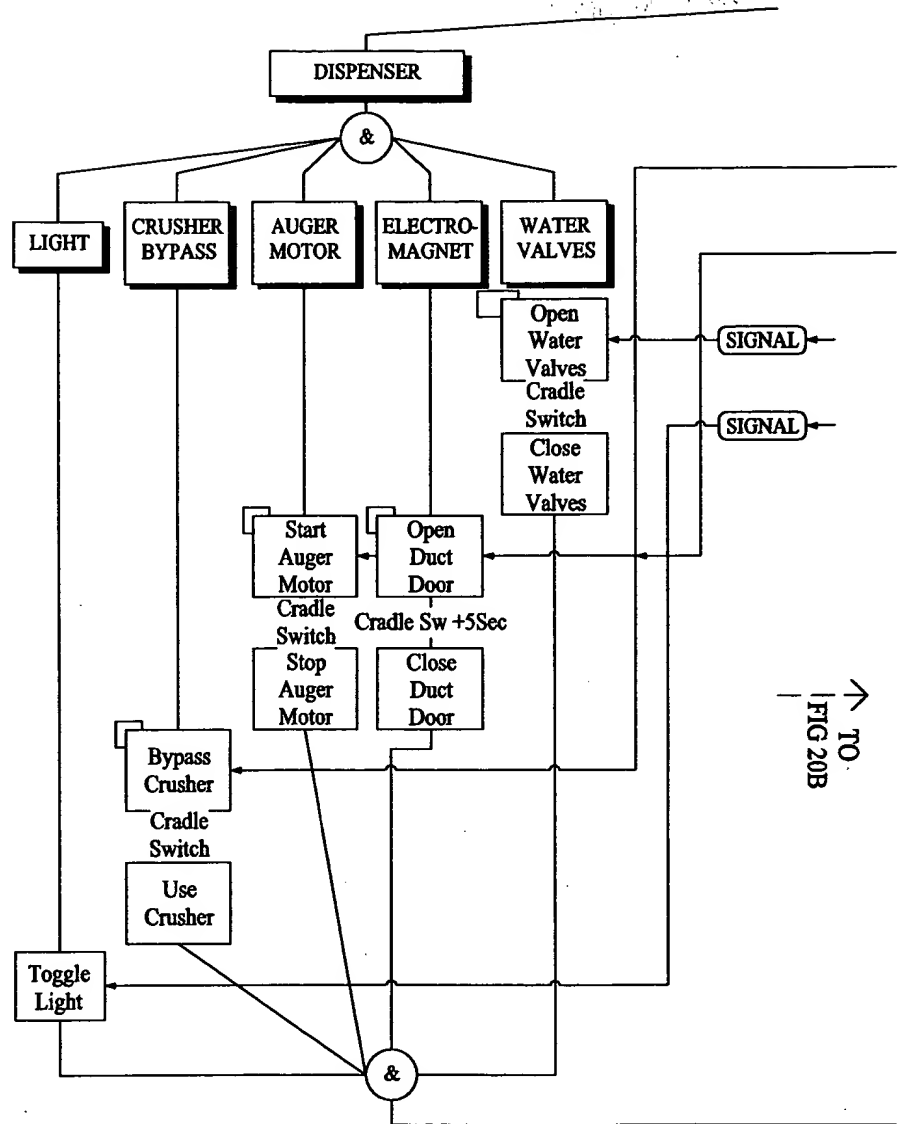


FIG. 20A

Dispenser Behavior

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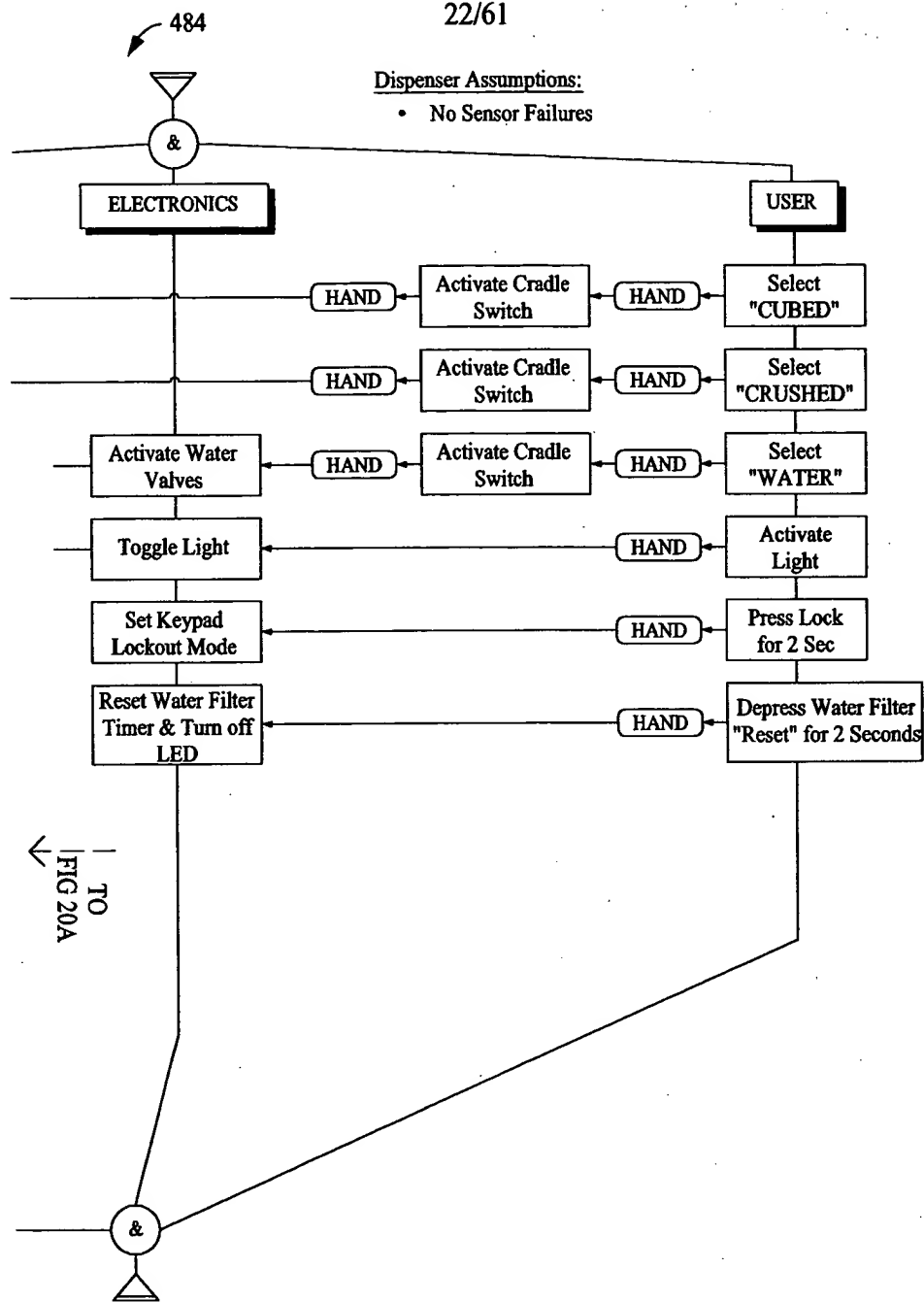
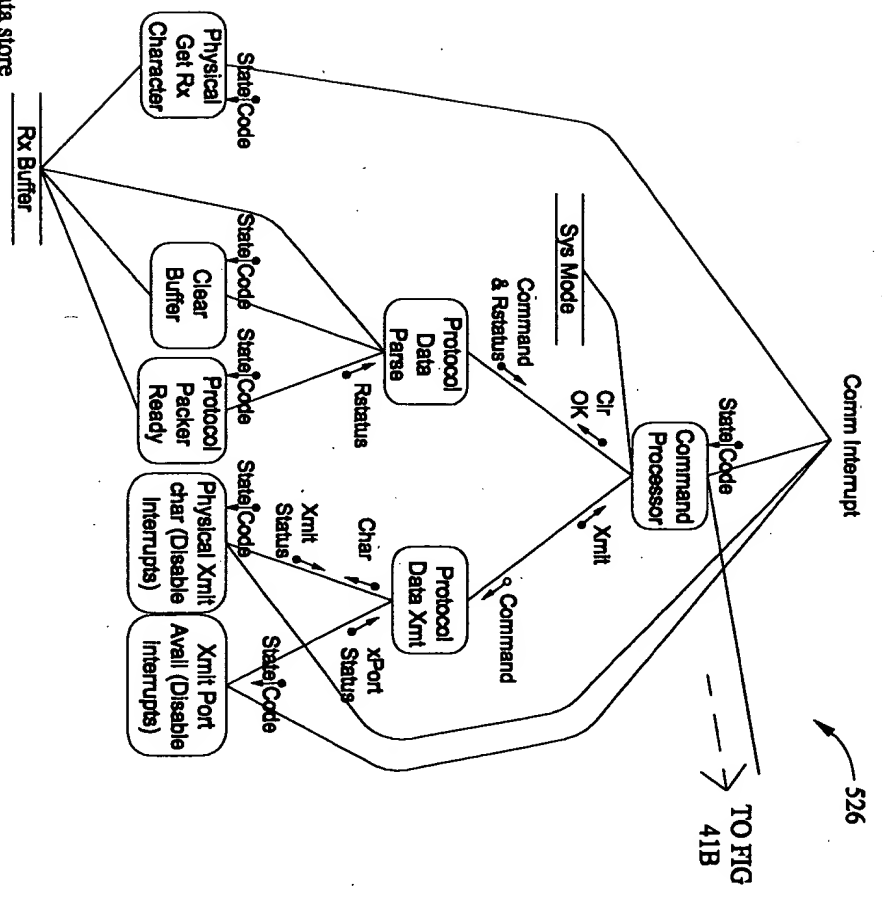


FIG 20A

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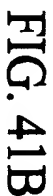
Note: Any Routine is allowed to read a data store
 The command processor can read or write
 any data store.
 Dashed line indicates a path for initialization only

FIG. 41A



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TO FIG 41B



LEGEND

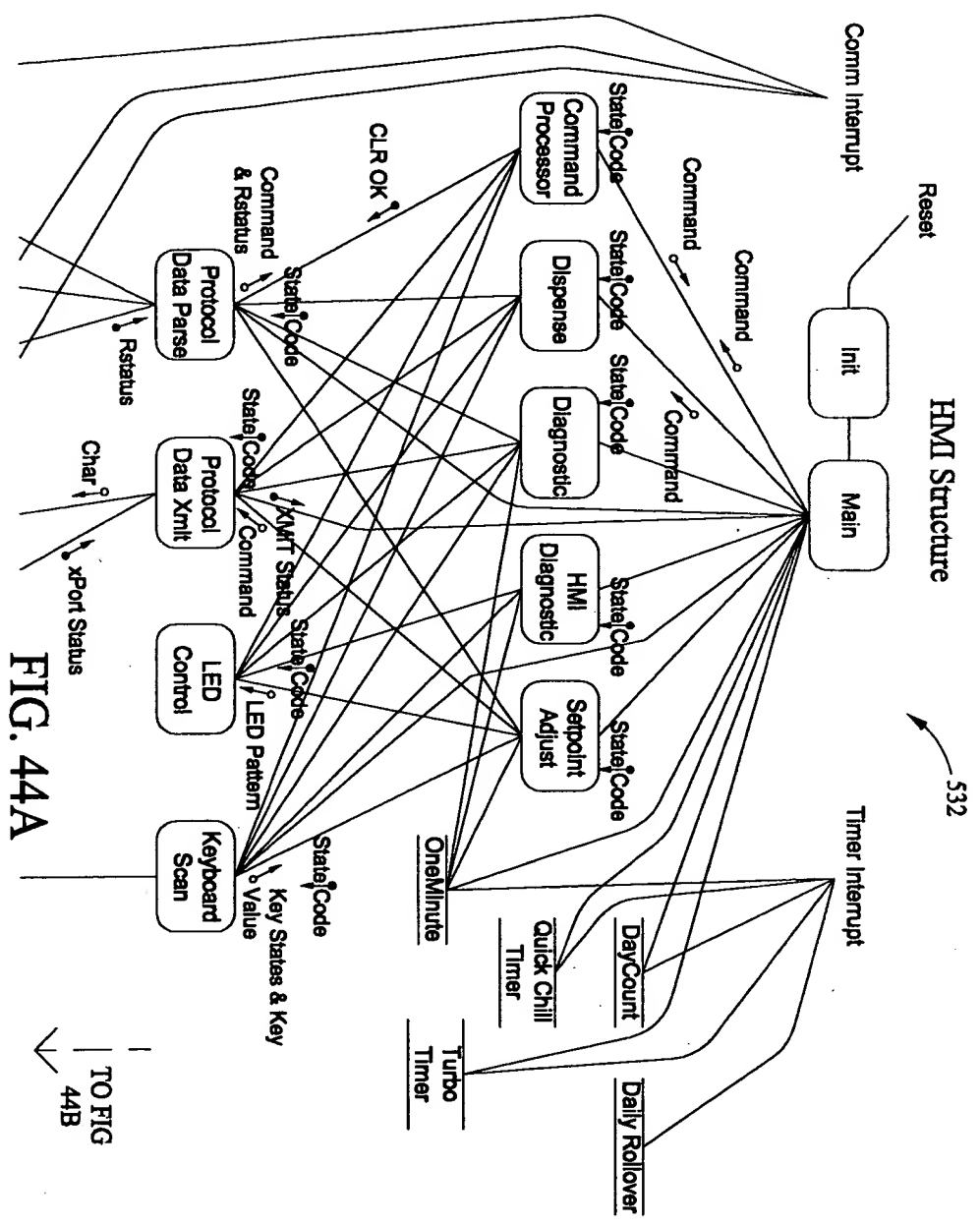


FIG. 44A

TO FIG
44B

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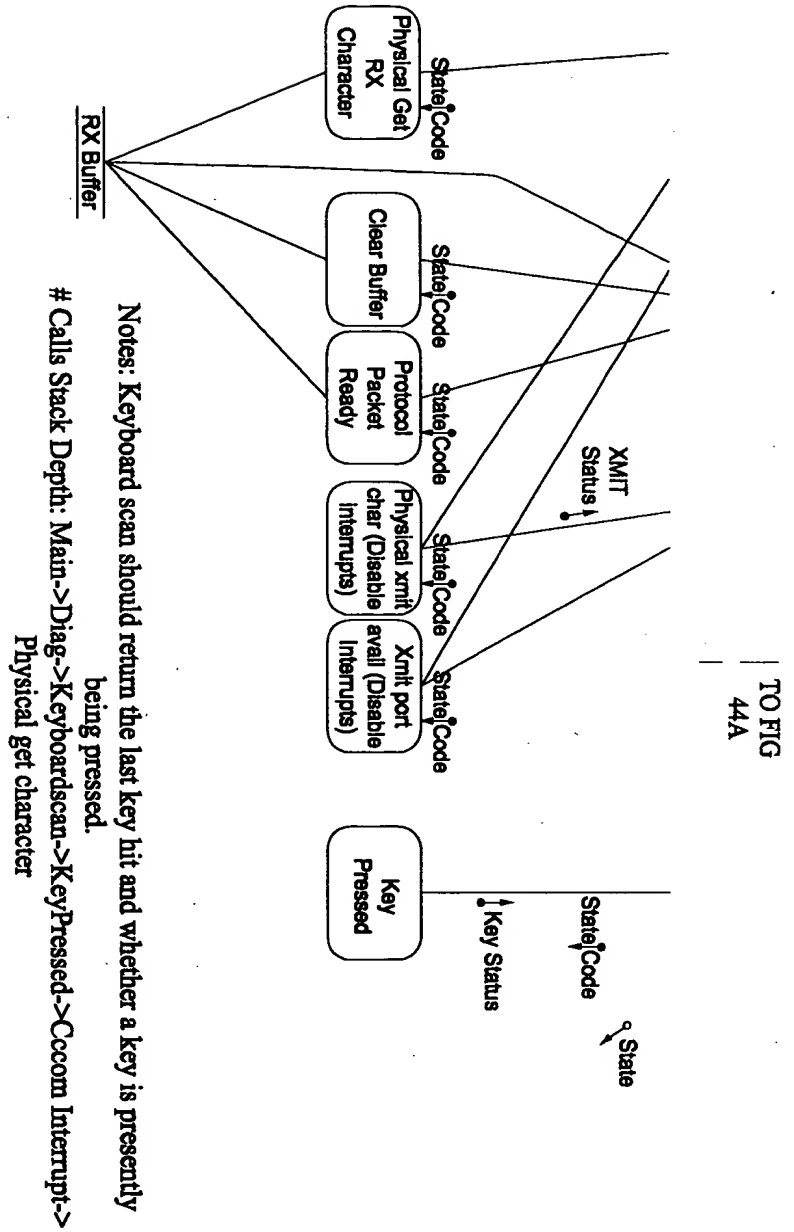


FIG. 44B

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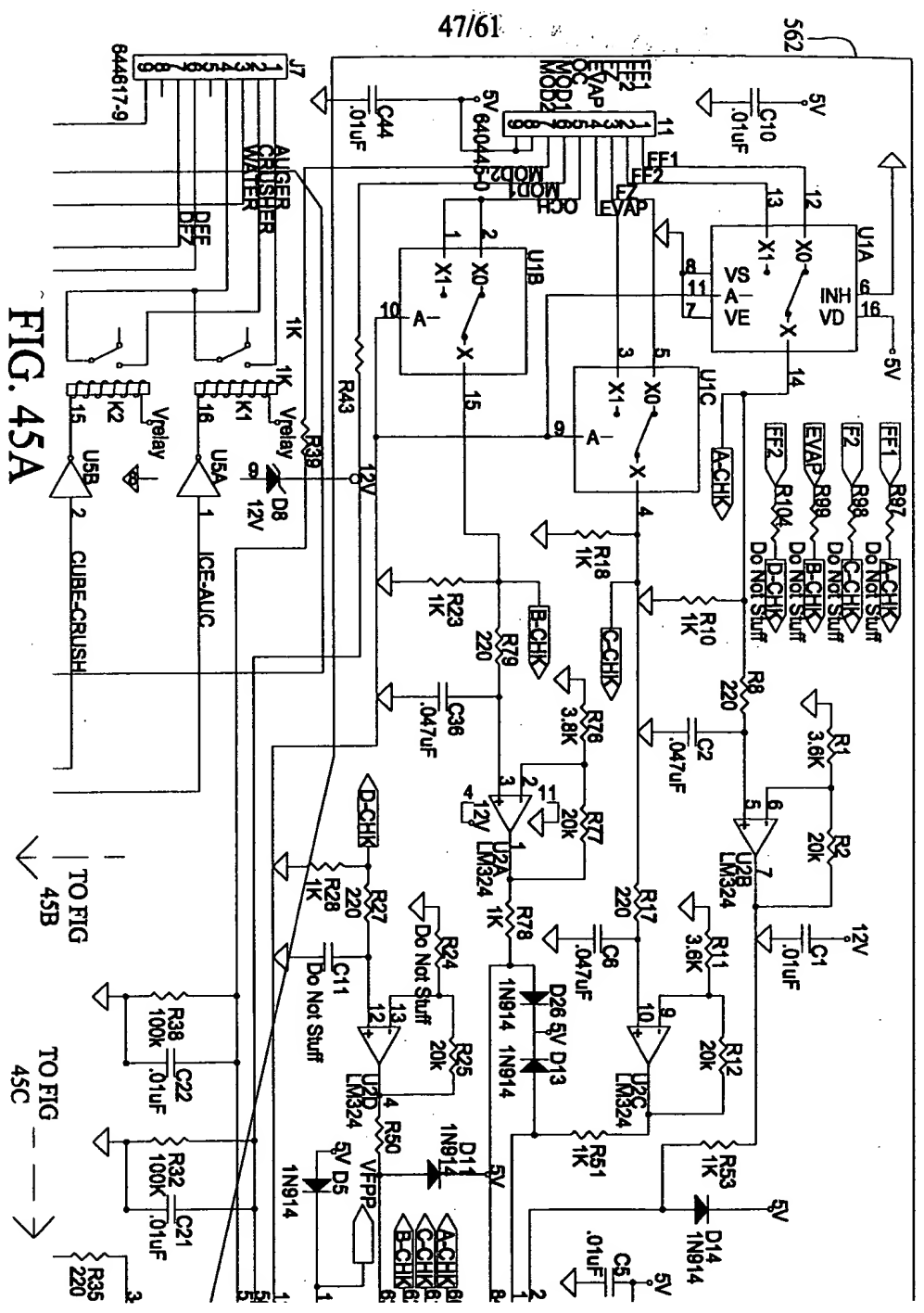
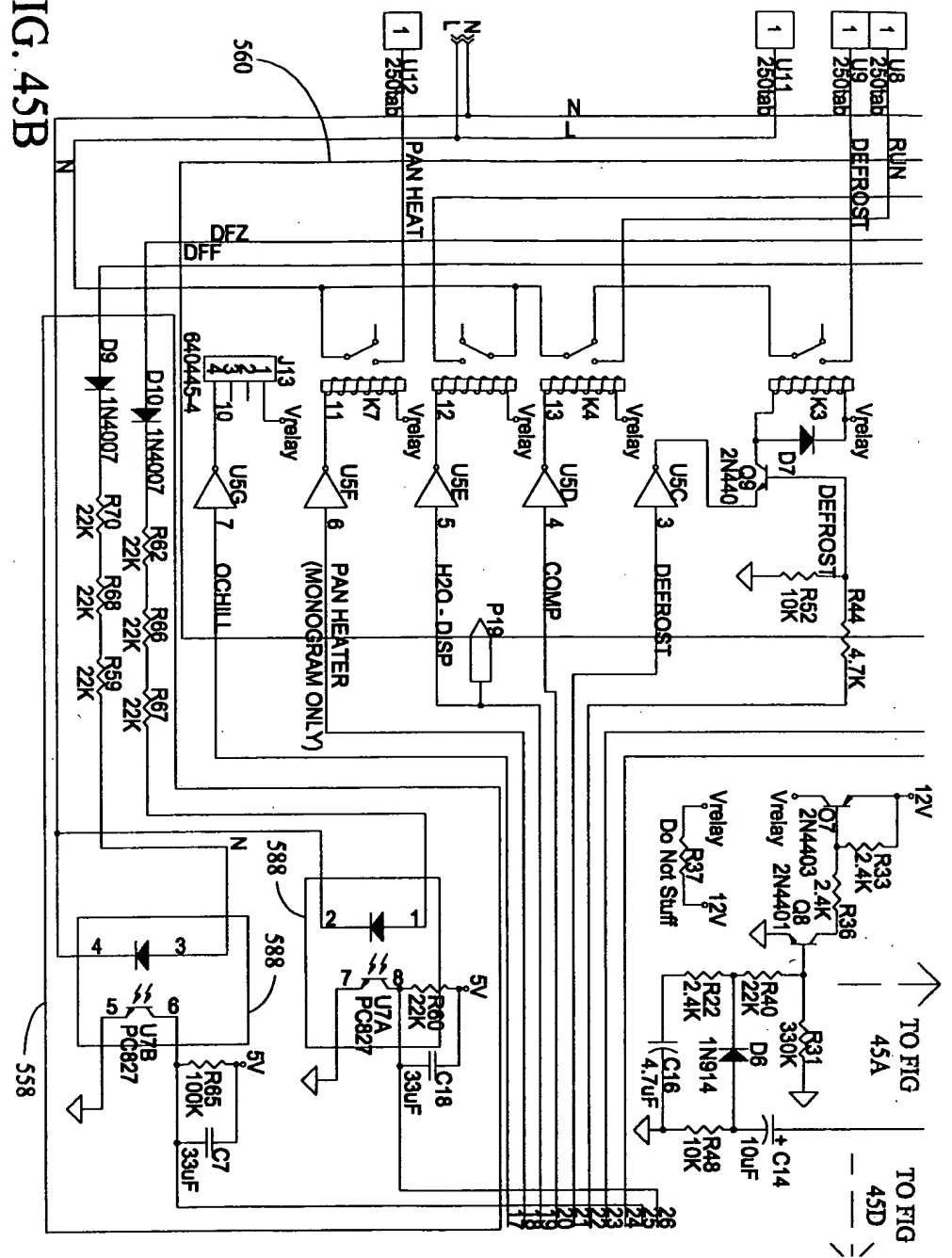


FIG. 45A

TO FIG 45B

TO FIG 45C

FIG. 45B



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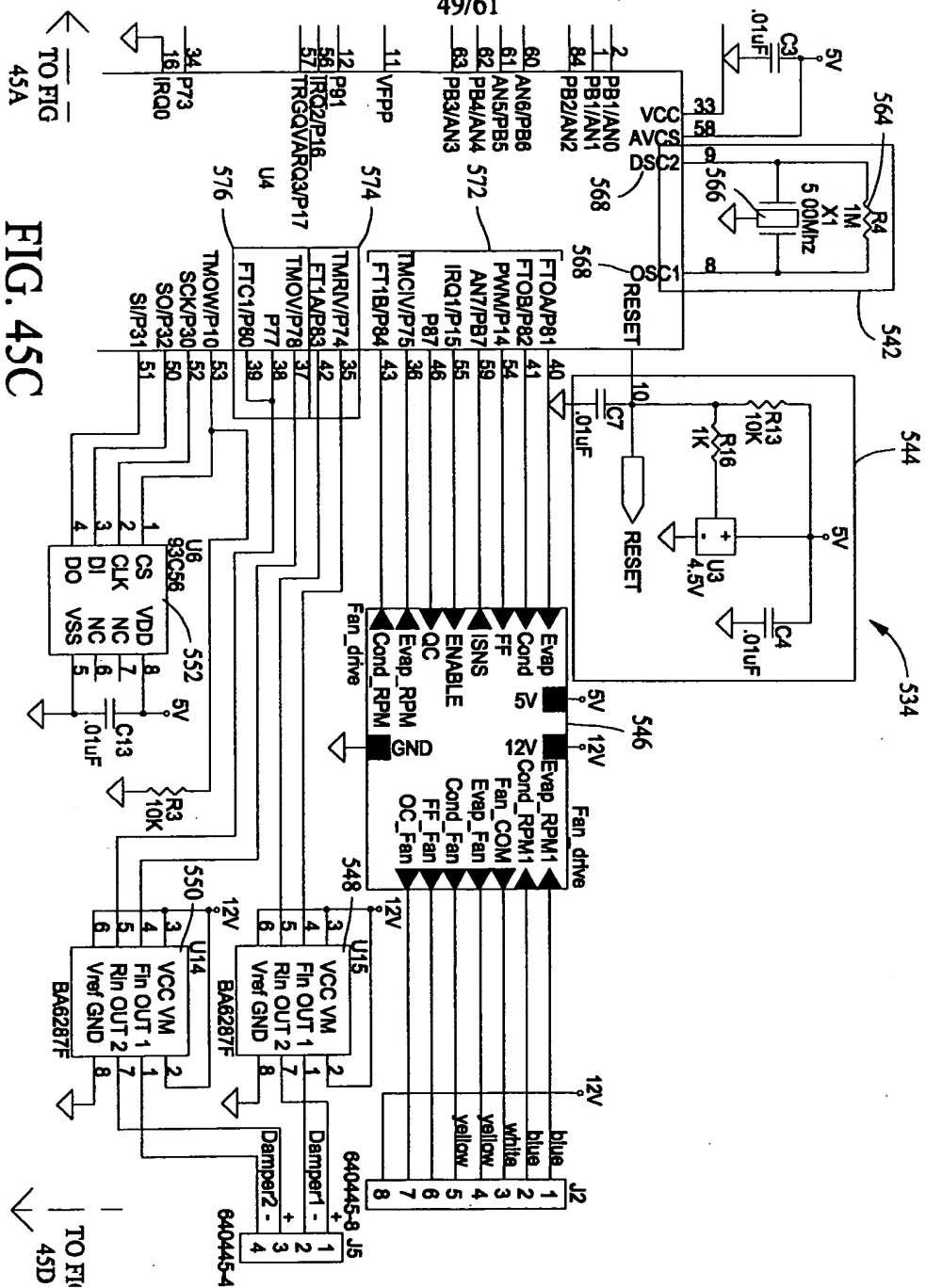


FIG. 45C

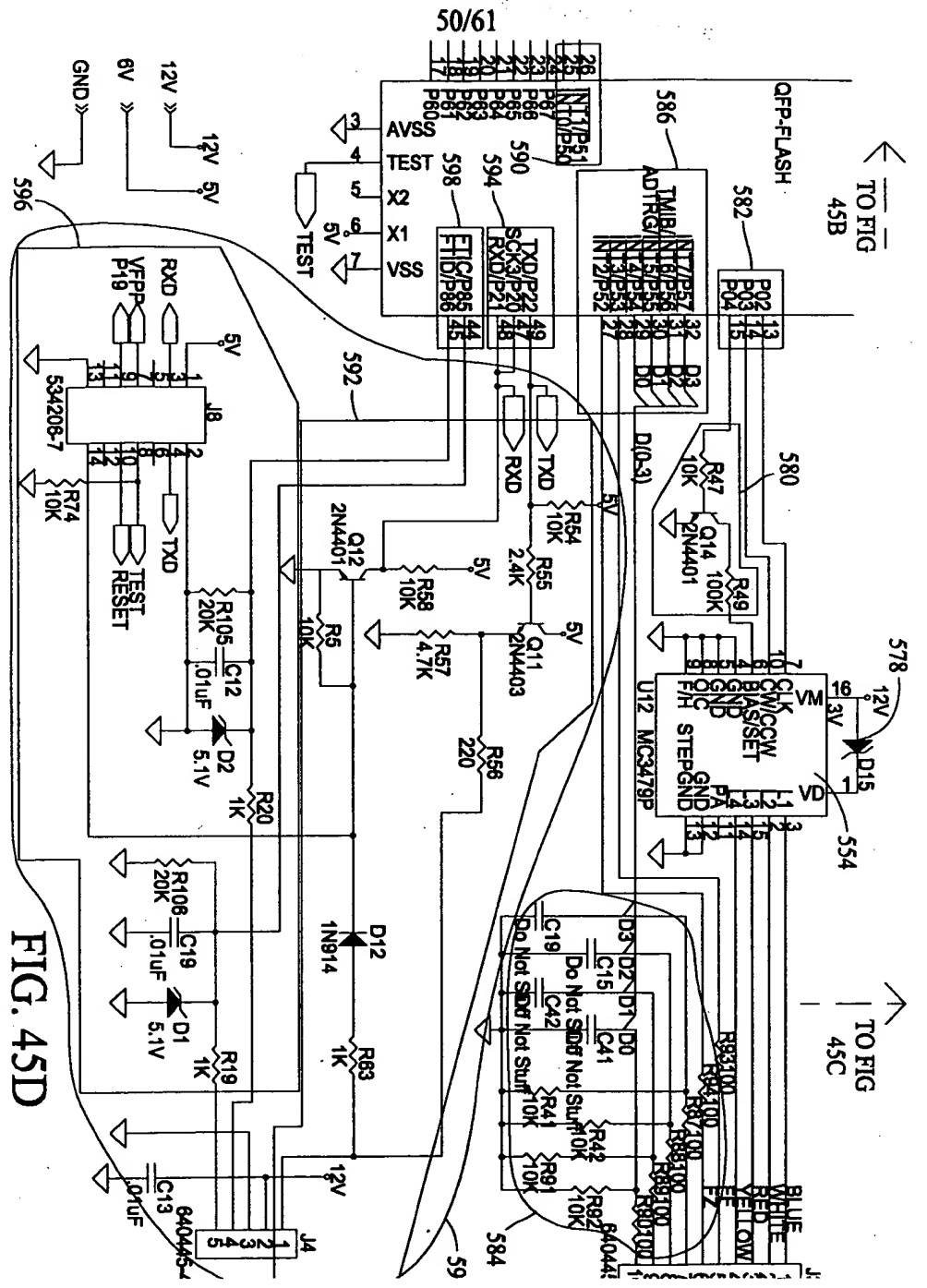


FIG. 45D

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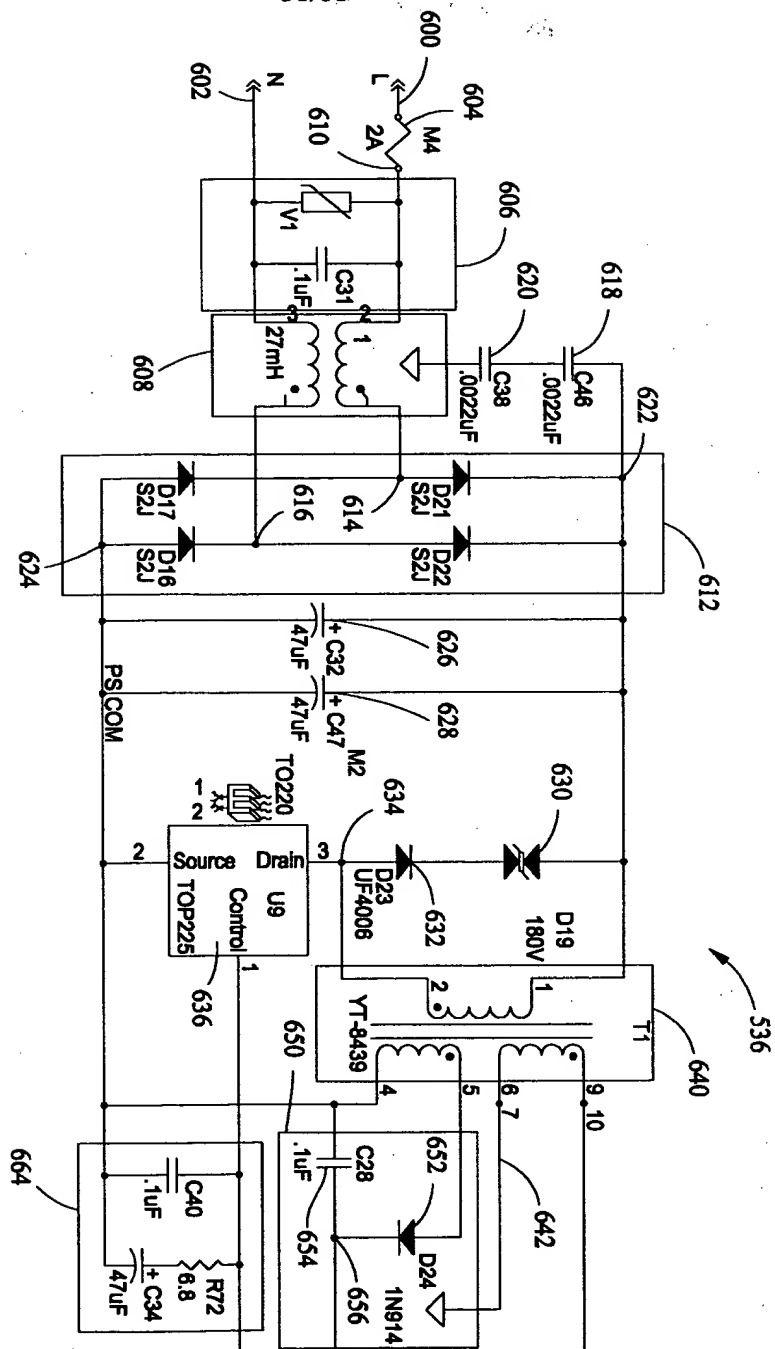
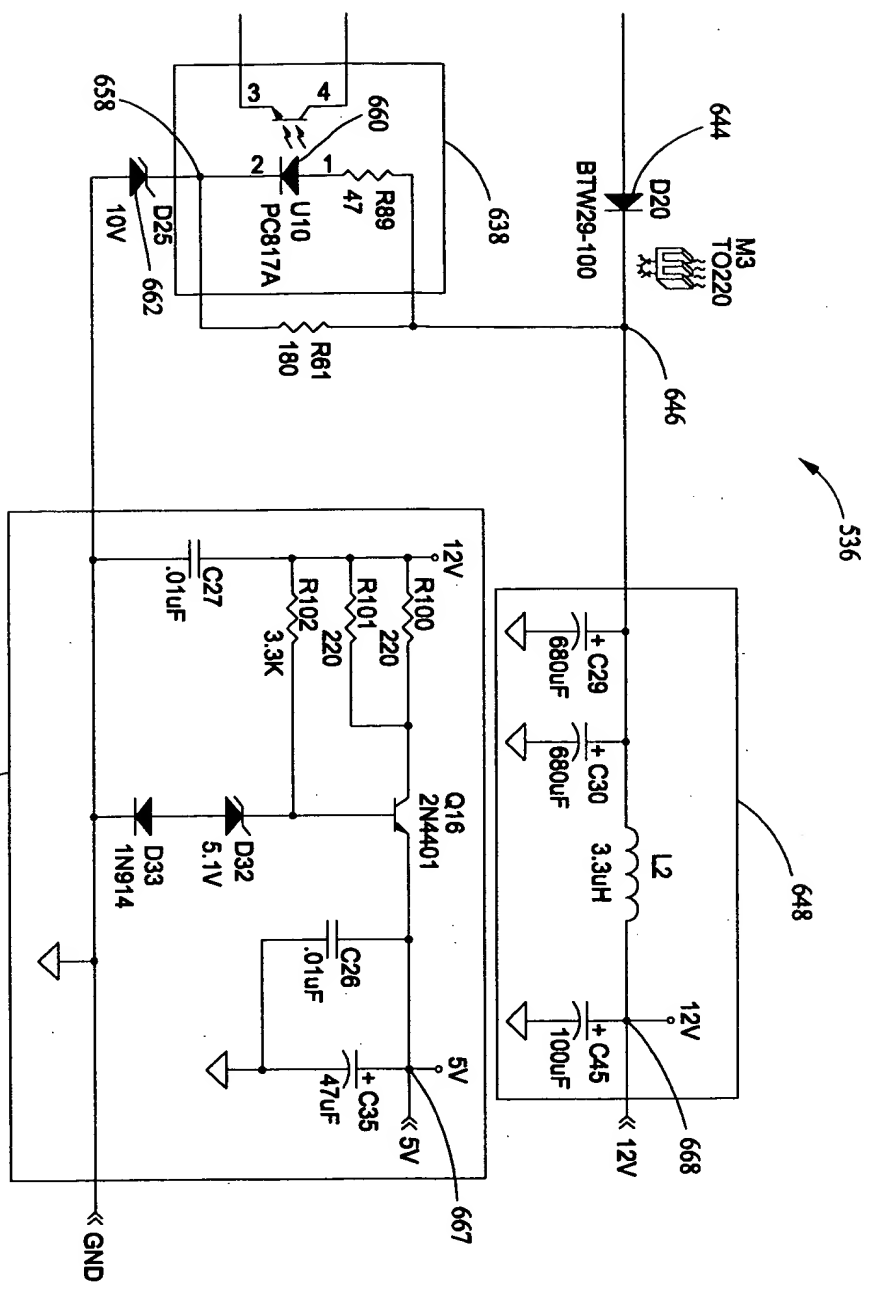


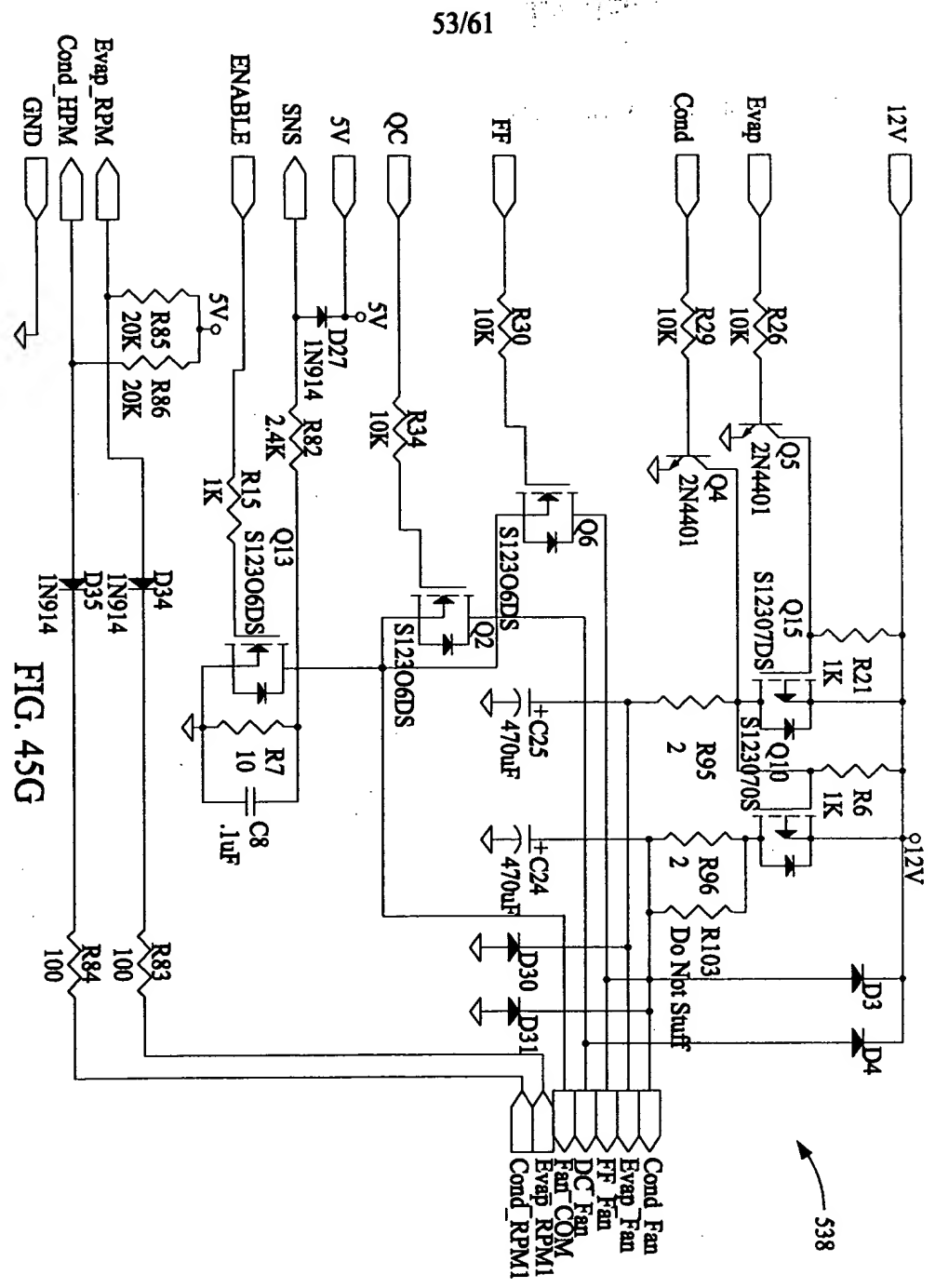
FIG. 45E

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FIG. 45F



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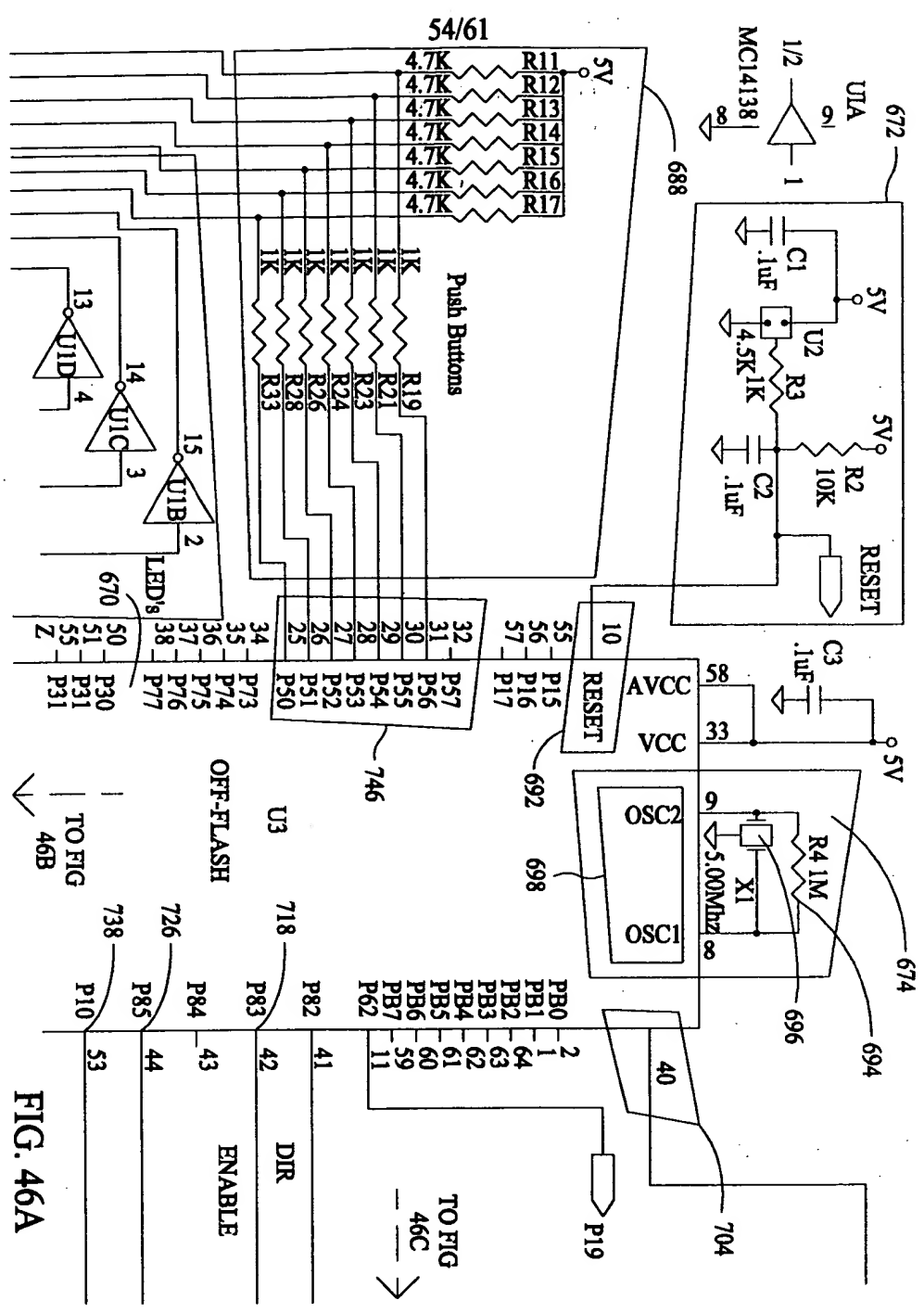
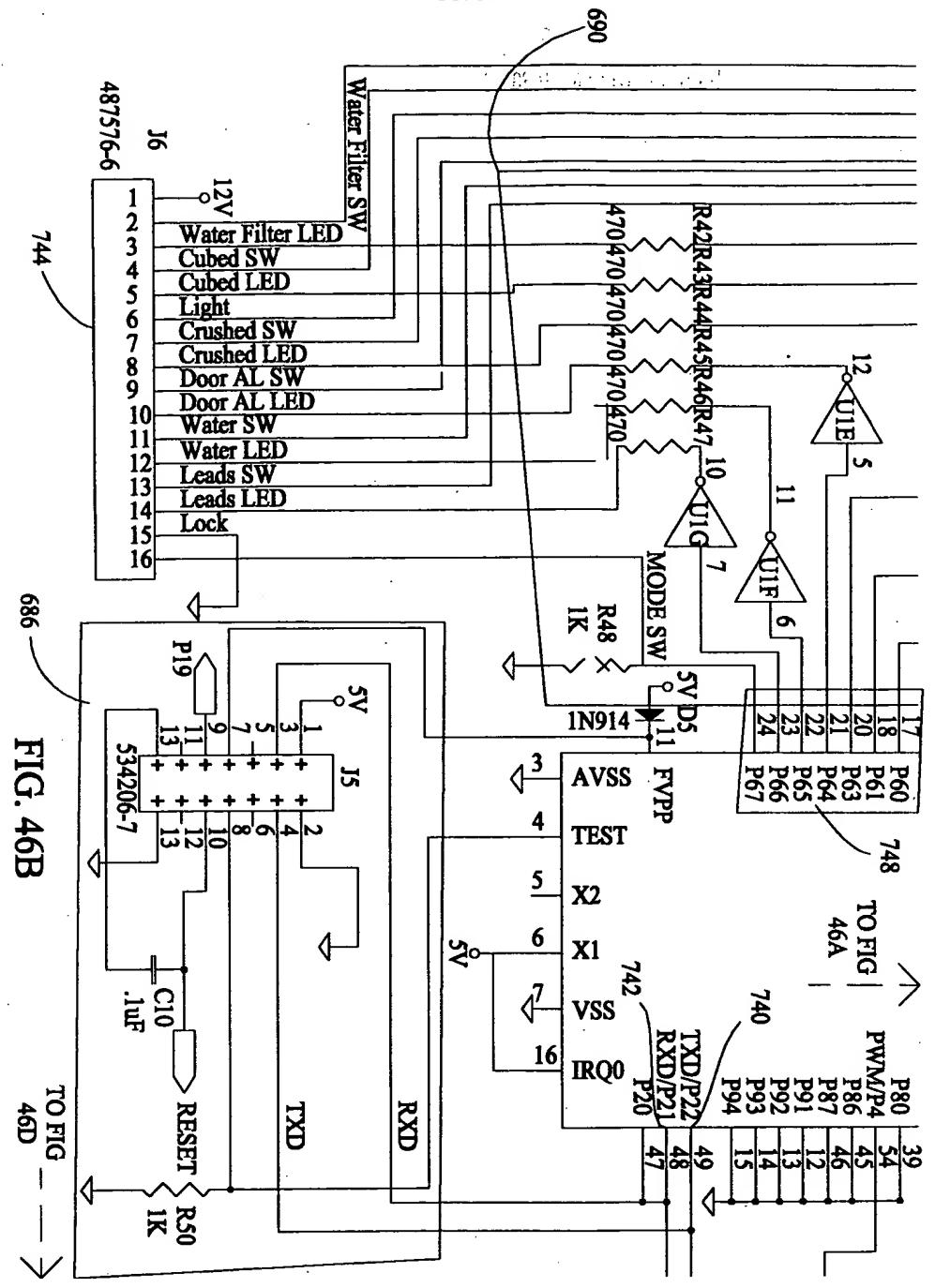
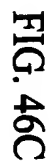


FIG. 46A

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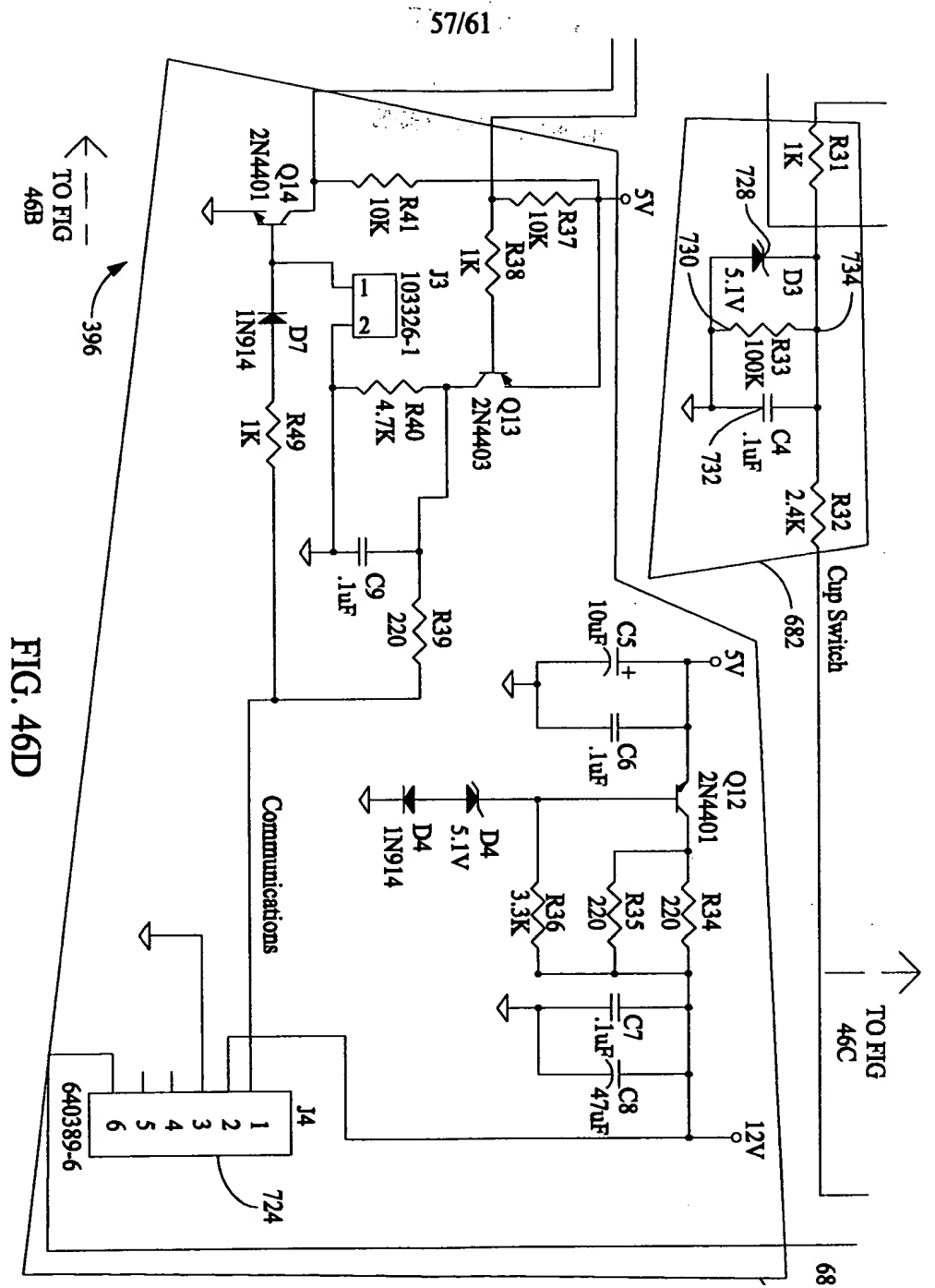
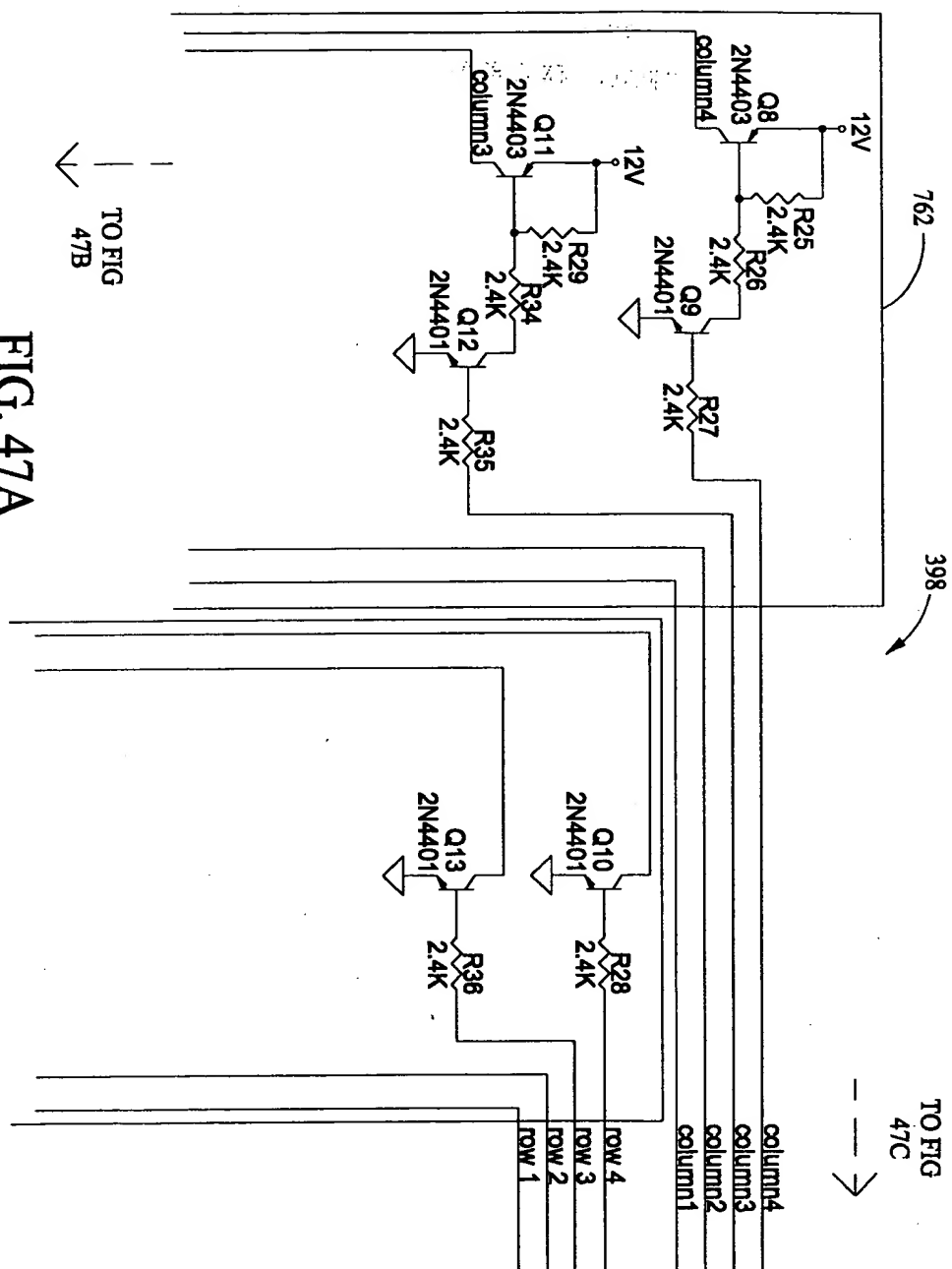


FIG. 46D

TO FIG
 46B

TO FIG
 46C

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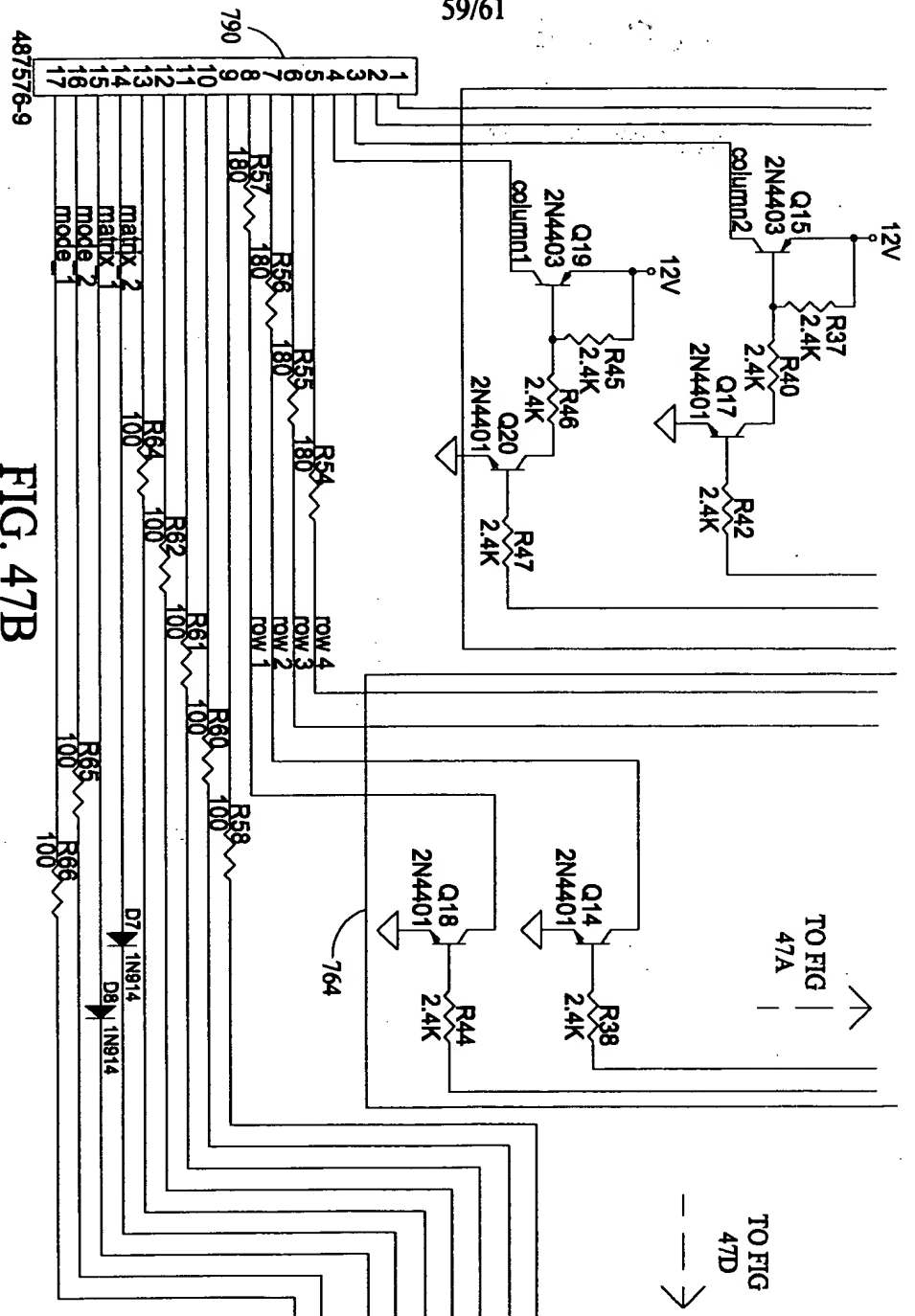


FIG. 47B

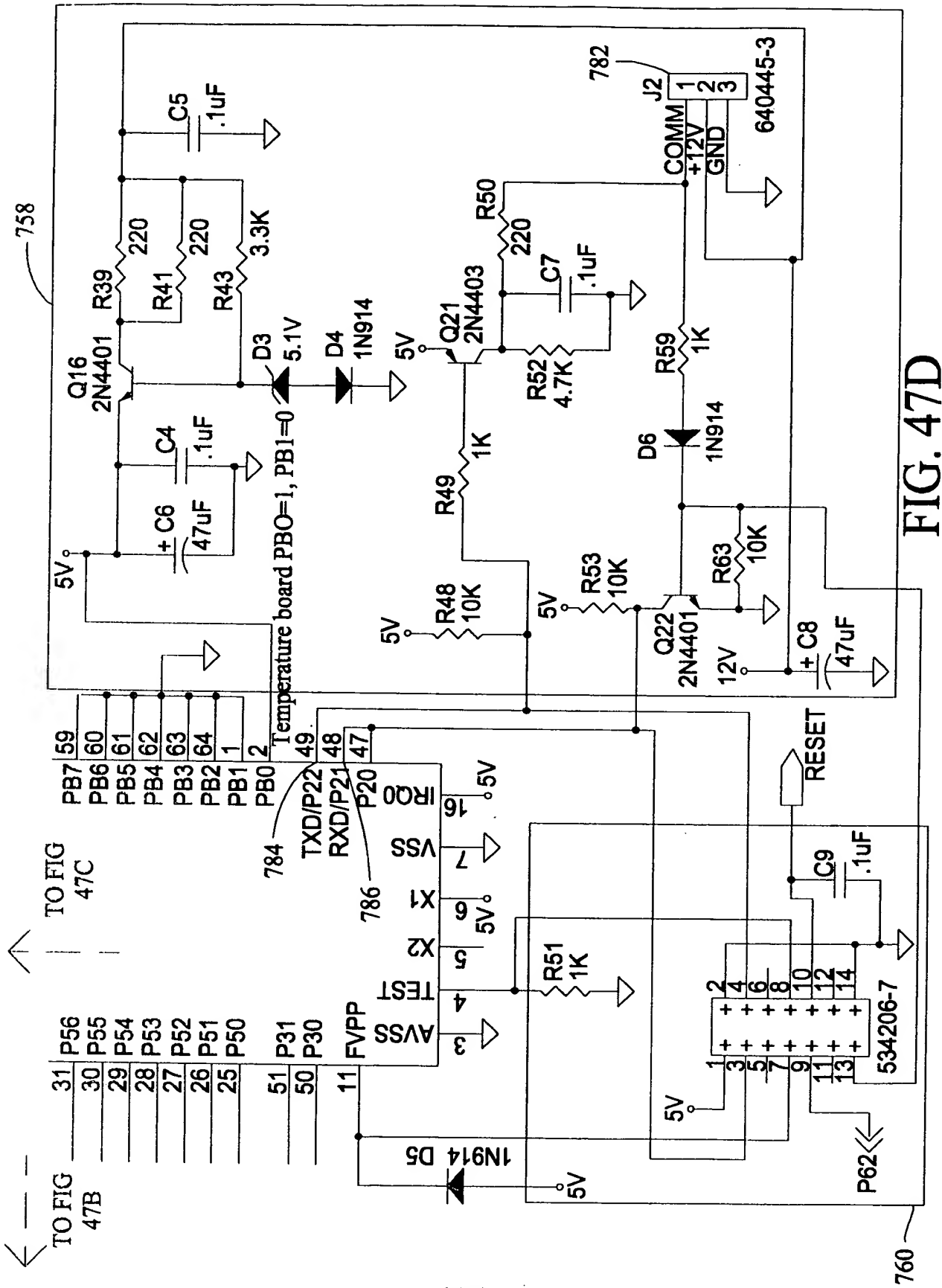
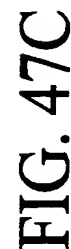


FIG. 47D



TO FIG
47D

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TO FIG
47A